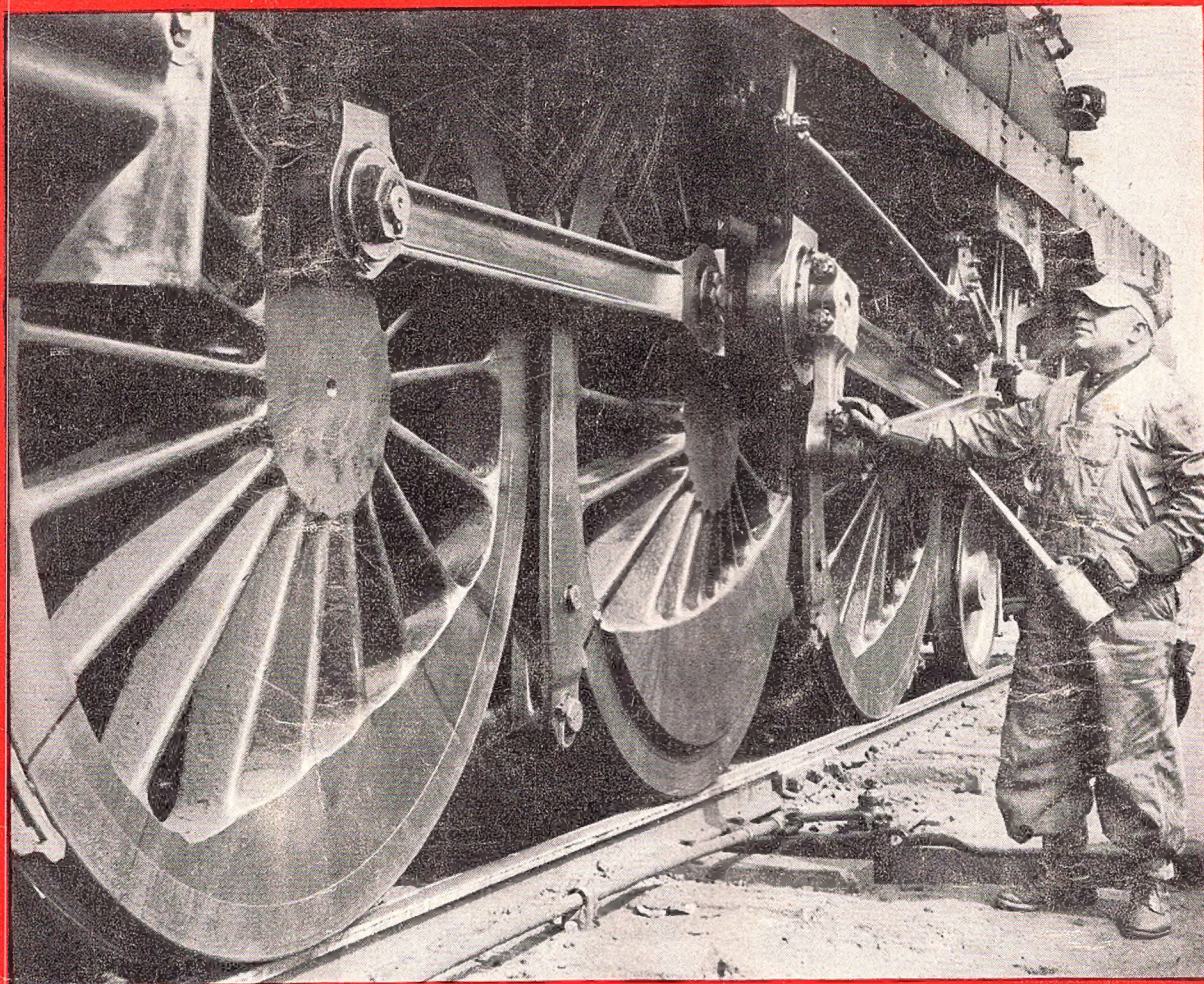


THE **MODEL** **CRAFTSMAN**

JUNE 1947

35 CENTS

SE-5 STUNT PLANE
B & O PACIFIC LOCO
BAKER VALVE GEAR



MODEL RAILROADS



MODEL AIRPLANES



MODEL RACE CARS



MODEL BOATS

Headliner!



NEW BOX CAR "Glamorous"

says Manufacturer

Woodbury Heights, N. J. April 15, 1947. An official of the Mantua Metal Products Co. waxed poetic about the new box car his firm has in production. "It's really glamorous," he said, "it's a perfect reproduction in scale of the full size cars. Look at the detailing! Why even the sliding doors actually work! And here's a scoop for you—we have the new Baltimore & Ohio 'Sentinel' Service car sides. They're the newest things on wheels!

"Every inch of the model is all metal. It has the famous Mantua automatic couplers and insulated trucks. It will sell for \$2.95 complete, ready to assemble, same as our other cars. There are 11 other

car sides to choose from too." Baltimore & Ohio (Regular box car), Canadian National (Green Maple leaf), Great Northern (Yellow car with Goat), New Haven (Large monogram), New York Central, Pennsylvania, Santa Fe (The Scout, with large map), Seaboard (Orange Blossom Special), Chesapeake & Ohio, Chicago, Burlington & Quincy (Burlington Zephyr on one side—EVERYWHERE WEST on other side), Union Pacific System (Road of the Streamliners on one side—SERVES ALL THE WEST on other side).

Dealers will have the new box car ready for delivery during May.



Have you seen the new 1947 Mantua Handbook & Catalog?
It's a big 50¢ worth.

MANTUA METAL PRODUCTS CO.

"Pioneer and leader in HO gauge"

WOODBURY HEIGHTS

NEW JERSEY



BOB HOPE

starring in Paramount's
"MY FAVORITE BRUNETTE"

*"I'll never grow up
...I Hope...I Hope!"*

Hardest working guy in Hollywood, they call Bob Hope. He'll wear himself out, they say, as he dashes from radio to films to benefit performances.

But Hope says "nope" . . . that his hobbies will keep him young!

First, comes his happy family . . . a charming wife and four children. And one of these, aged seven, is the reason for Bob's number-two hobby — turning out model planes and things with his X-acto "Toolmaster" Chest.

Bob is x-uberant about this x-traordinary hobby chest. "I'm no master craftsman," he says, "but X-acto sure makes me feel like one. It takes a slick job to get top rating with my son, but thanks to X-acto I haven't missed yet. Believe me, it's no zag when I say I love that X-acto!"

BOB HOPE'S "TOOL-MASTER" No. 89 X-acto Chest (shown in photograph) includes the works in a super-de luxe job—knives, blades, tools, to keep you hobby-happy for years and years. Complete in a handsome wooden chest that keeps everything within easy sight and reach. **\$50**



AND for your son, or any beginner **No. 82 X-ACTO KNIFE CHEST** **\$3.50**

x-acto *

HANDICRAFT KNIVES & TOOLS

Singly or in sets, 50c to \$50.
(Prices slightly higher in Canada)

At hobby, gift and hardware shops, and department stores

X-acto Crescent Products Co., Inc.
440 Fourth Avenue, N. Y. 16

In Canada: Handicraft Tools, Ltd.
Hermant Bldg., Toronto

*Reg. U. S. Pat. Off.



WE BROKE HIS HEART!

You have broken my heart! If you could look back in the records, you would find that outside of the first few issues which I happened to find on a newsstand, I am perhaps your oldest continuous subscriber. The Craftsman has followed me once or twice when we moved. We have been in our own home for nearly six years. During all that time you have perfectly addressed me. Then suddenly you change my address as per the enclosed card. *I don't know how you could do this to me!* I may even have lost a couple of copies to ruin a perfect file from Vol. 1, No. 1. I will check and let you know. This card is the first intimation that my subscription was nearing its end. I am enclosing \$5.00 for a renewal for two years. Please correct your address list and just bill me. Never let me lapse, **PLEASE!** . . . Norman Field, No. Hollywood, Calif.

DIESELS ARE OK!

Concerning your cover on the May issue—Diesels. Sometime ago, in fact two years, I was in Scranton, Pa., visiting a friend of mine who is a towerman in the Scranton Lackawanna yards. He commands the switches leading out of the yards of Scranton to the hump, Cayuga and Goosey railroad (*Goosey*, so named by residents of the "Highworks" section of Scranton). His switches operate by compressed air and are a sight to behold! He told me that the president of the Lackawanna made a statement like this, "*Give me sixty-two diesels and I will run the whole road without the aid of steam.*" Now we all know that diesels are the coming locomotive, yet you have never published a good diesel locomotive and plans. Personally I would like to build a DL&W diesel and I guess a lot of other HO Modelers would too.

Maybe sometime in the future this could be arranged? Maybe! Yes!! I would sincerely like to own a handmade diesel. . . . R. W. Balmforth, Kearny, N. J.

IS OUR FACE RED!

Dear Sir and Brother:

Page 23, April MC: Wherefore *Electrical Trolley Winch*???? Hunh? I have considered this a spring retriever; kindly refrain from having boat builders draw trolleys hereafter.

Most annoying, sir! In fact, if you

THE MODEL CRAFTSMAN

RAMSEY

NEW JERSEY

Including "THE MODELMAKER"—Est. 1924 and MINIATURE RAILROADING Magazine

EDITOR AND PUBLISHER *Charles A. Penn*

MANAGING EDITOR *Robert W. Thompson*

ART DIRECTOR *Walter A. Stalter*

RESEARCH EDITOR *Louis H. Hertz*

Field Editors: Railroads—L. W. Sagle, H. L. Adams. Race Cars—C. A. Penn.

VOL. 16, NO. 1

JUNE, 1947

CONTENTS FOR JUNE, 1947

RAILROADS

D & L W Consolidation—By Warren B. Crater	16
B & O Sentinel Car	19
Piketown Layout	20
Baker Valve Gear	21
Boston & Maine Mogul—By Lewis Austin	22
Along The Tinplate Track—By Louis H. Hertz	25
B & O Pacific 4-6-2	26
Big City Car—By William Schopp	29
Small Indexing Attachment	30
Flywheel Boiler Feed Pump—By C. Blackstaffe	31
Prototype Quiz	43
Model R.R. Club News	6

MODEL AIRCRAFT

SE-5 Stunt—By Joseph Flor	8
Ad Astra—By L. E. Marlow	11
Model Plane News	10

RACE CARS

Chicago Bids For Rail Nationals	32
Speed Chart	33
AMRCA Sanctioned Meets	35
Present Speed Records	37
By-Laws For AMRCA Clubs	38

POWER BOATS

Model Power Boat News—By Bob Graham	14
-------------------------------------	----

read the list of parts on the left of the drawing, there arises some confusion as to what this here Nye guy is gassing about. You persons surely know better, I trust; betcha Willie Schopp is requiring picking up off the floor from laughing so hard; me too likewise!

Trolley idler contractor is ingenious for conveying absolutely nothing; here in Pittsburgh (we HAVE a real trolley company, yclept *Pittsburgh Railways Co.*) this is known as a trolley fork and wheel. Tut, tut! Trolley cable is also quite good, this is known as a retriever rope and is not a cable. *Trolley pole*, he says is a trolley tube, heugh! heugh! Missster Nye!

I am really disappointed with this here alleged drawing; not as a drawing but

in the nomenclature. I will close with the words of the immortal bard name of A. Ward: *This is 2 mutch!* . . . *Ivan W. Saunders, Pittsburgh, Pa.*
P. S. Although I'm an employee of the Pittsburgh & Lake Erie R. R., I like the trolleys. Kindly return W. Schopp—or else!

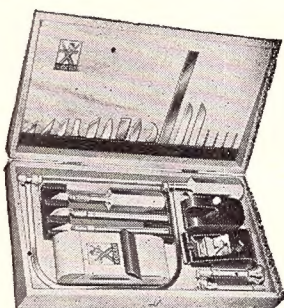
HIS ONLY COMPLAINT

The only complaint I have with the magazine is why not put more older style cars in the railroad section? Kits can be obtained for most modern cars. How about some of the wooden gondolas and hoppers of the D & H? They look old but are still used and would go well on a small layout. . . . *James Allen, Jr., Steubenville, Ohio.*

Published monthly by Model Craftsman Publishing Corp., 1309 Noble St., Phila. 23, Pa. Editorial, advertising, executive offices, Ramsey, N. J. Charles A. Penn, President and Treasurer. Helen M. Penn, Secretary. Entered as second class matter May 3, 1945 at the Post Office at Philadelphia, Pa., under the act of March 3, 1879. Price 35c per copy. Subscription \$4.00 per year in the United States and Possessions; foreign and Canadian subscriptions \$5.00 per year. Manuscripts not accompanied by return postage cannot be returned. The contents of this magazine must not be reprinted without permission. Copyright 1947 by Model Craftsman Publishing Corp.



Casco Motor Tool. W/Acces. (Above) \$22.50
Dremel Moto Tool Kit. W/Acces. 23.50
Burgess Deluxe Vibro Tool. W/Acces. 16.50
KING KUT TOOL CHEST 10.00
KING KUT Carving Set 5.00
Model Builders Vise 2.95
Model Builders Anvil 2.00
Bunsen Burner 2.25
Soldering Iron W/4 tips 5.00
Handee Motor Tool. W/Acces. 27.50
Woodburning Pen Set 2.00
61-80 Carbon Drill Sets. W/Case. 4.00



No. 85 X-acto Tool Chest—3 all-metal knives; assortment of blades; saw; sander; stripper; planer; 2 drill holders; 10 drills; 6" steel ruler; complete in wooden chest, \$12.50. (Illustrated)
X-ACTO #1 & #2 Knife. \$ 5.50
#51 and #52 Knife 1.00
#83 Deluxe Knife Set. 5.00
#62 Double Knife & Blades. 2.00
#80 Whittlers Knife Set. 2.00
#84 Small Tool Chest 7.50
#77, Gouge Set 3.00
Other X-Acto tools available are: Pliers, Protractor, Tweezers, Hammer Set and those items contained in #85 Chest.

RAILROAD ACCESSORIES

Our stocks are rapidly becoming complete as production is increasing. Most all items for "O", "OO", "HO" are now available. Full line of Mantua, Varney and Walther's are in stock. Whatever you may see advertised elsewhere in this magazine, the chances are we will have it.

Varney Power Trucks "HO" \$11.50
Pittman Power Pack 17.75
Challenger Switch Machine 2.50
Kasner "O" Stream. Pullman (Comp.) 8.50
Kasner "O" Stream. Coach (Comp.) 9.50
Kasner "O" Baggage-Mail (Comp.) 8.75
Kasner "O" Duplex Pullman (Comp.) 8.95
Indianhead Switch Machine 1.25

"HO" CAR KITS

Varney 2.50
Lehigh 2.50
J-C 1.35
Ideal 1.75
Mantua 2.95
VARNEY'S New "O" Gauge
B. & O. Ten Wheeler Loco Kit \$100.00
Lobaugh Berkshire Loco Kit, Complete 128.50

"HO" LOCO KITS

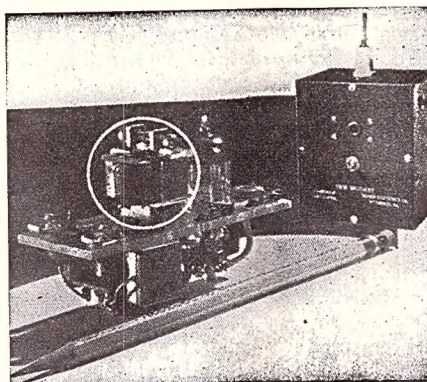
Varney Dockside Switcher \$15.00
Mantua Bell of 80's 29.50
Mantua Mogul 29.50
Mantua Roundhouse Goat 24.50
Varney New Pacific 37.50

GAS MOTORS (Immediate Delivery)

Arden P. B. .099	A	\$16.50
Arden B. B. .099	A	19.50
Arden B. B. .199	A	21.50
Perky	A	18.00
Bantam	A	18.50
Atom	A	15.50
Ohlsson 19	A	14.50
Ohlsson 23	B	16.50
Drone Diesel	B	21.50
Junco Kit	B	6.75
Bullet	B	12.75
Delong	B	19.50
Melcraft	B	18.50
Rogers "29"	B	15.75
Rogers "Ram"	B	9.95
Cannon "300"	B	19.50
Torpedo	B	18.50
"OK" "29"	B	18.50
Rogers "35"	C	16.50
"OK" Raceway-Marine "60"	C	26.00
Madewell	C	18.00
Cannon "358"	C	21.50
Fleetwind	C	24.75
Rocket	C	22.50
O'K Super 60	C	21.00
Atwood JH	C	23.50
Pacemaker	C	24.95
Air-O	C	24.95
McCoy RC or Air	C	35.00
Hornet RC or Air	C	35.00
Ohlsson 60	C	18.50
Cyclone GR-A Dual Ign.	C	23.40
Cyclone GR-A Single Ign.	C	22.65
Minijet	C	35.00
O'K CO-2 Engine	C	7.50

We have a complete stock of all leading gas motor parts.

CHAMPIONSHIP RADIO CONTROL



★ SMALL ENOUGH for Class B. Can be installed in control line models. The last word in scientific plane control by radio! Equipment furnished includes transmitter in black crinkled finished metal case size 4 x 4 x 6", range approximately 2 miles; receiver size 4 x 1 7/16 x 2 3/4" high; weight 5 ounces, operates on 4 Pen-Light batteries (2 ounces); 1-45V, "B" Battery (8 1/2 ounces); and escapement unit size 2 1/4 x 1 1/2 x 1" high, weight 1 ounce (not shown). Also useful in model railroading for radio train control \$59.50

CORR'S DE LUXE CATALOG

52 pages—Planes, Ships, Tools,

Accessories, etc. Post Paid

New Authenticast Catalog

Metal Ships—Tanks—Planes—35c

25c

CONTROL LINE KITS

New P. D. Q.	\$ 5.00
P. D. Q. Senior	7.50
Whizzer	7.50
Topping	10.00
Cyclone	4.95
Atomic	3.50
Super V Shark	4.95
Perky	2.00
Miss Behave	3.95
Miss Behave Streamline	4.95
Baby Miss Behave	2.75
Bipe	3.95
PDQ Aero Sport	7.50
Meteor	8.95
Ercoupe	7.50
Knight Twister	7.75
Demco Special	7.95
Flicker	3.95
Hell Hammer	7.95
Tether Sharpie	2.00
Presto Liner	5.95
Stardust	10.00
Tyro	3.50
Capitol Navion	7.50
Whirlwind Jr.	\$2.95, Sr. 7.95
Competitor	5.50
A. J. Fireball	10.00
Trail Blazer	2.95
Zing	4.95
Smart Alec	6.95

PLUS MANY OTHERS

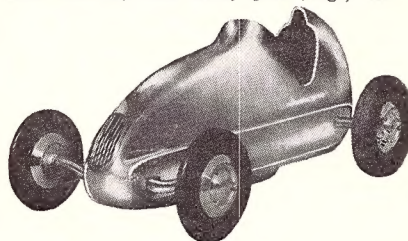
FREE-FLIGHT KITS

Interceptor	\$ 3.95
Zipper "A"	\$1.95, "B" 5.95
Sailplane	8.95
Skyrocket	2.95
Flamingo	9.95
Skybo	6.95
Piper Cub "A"	\$1.95, "B" 4.50
Playboy Jr.	\$3.25, Sr. 6.00
Baby Playboy	1.00
Runt	2.50
Buccaneer B Spec.	3.95
Honey "B"	3.95
Aeronca "B"	4.95
Buzzard Bombshell	9.95
Humdinger	3.95
Super Quaker	7.00
Westerner	A \$3.50, B \$4.50, C 7.95

PLUS MANY OTHERS

GAS MODEL ACCESSORIES

We maintain a large supply of all gas model accessories. Your selection of: props, coils, condensers, wire, dope, battery boxes, timers, motor mounts, balsa wood, spark plugs, etc.



RACE CARS

Dooling (illustrated) \$45.00
McCoy Invador Prototype 42.50
McCoy Streamliner 42.50
McCoy Hot Rod 42.50
Complete stock Wheels, Tires and Parts

SPEED BOAT KITS

Reuhl Hydroplane	\$15.00
Sea Bird	5.95
Sea Gull	7.50
O'Gee	10.00
Sea Elf	5.50
Harco Cabin Cruiser	4.50

SAIL BOATS

All Star Cape Cod	\$3.50
All Star Grand Banks	3.00
All Star Sail King	2.00
Comet Gypsy Sloop	1.00

GUNS

Marine Sea Mortar	\$4.00
Marine One Pound Gun	4.00
Marine Artillery Field Piece	5.00
Innovation Cannon, Unfin.	8.50
Innovation Cannon, Fin.	13.95

Established 1890.

CORR'S

NATION'S HOBBY SUPPLY

812 9TH ST. N.W. WASHINGTON 1, D. C.

YOUR NEW HOBBY HELPER



**A WHOLE SHOP
FULL OF TOOLS
IN ONE!**

IMPROVES YOUR SKILL WITH WOOD, METAL, GLASS, PLASTICS

Takes the labor out of model-making and all fine-detail work. Means better results. Use it for grinding, routing, sanding, drilling, carving, finishing and 9,994 other uses. Precision-engineered, runs accurately in excess of 20,000 RPM, AC-DC, with more exclusive features than any other tool. At Department, Hardware, Electrical, Jewelry and Hobby stores.

**CASCO
ELECTRI-CRAFT TOOL KIT**

CASCO PRODUCTS CORPORATION
BRIDGEPORT 2, CONN.

RAILROAD CLUB NEWS

SYRACUSE, N. Y. The boys of the Onondaga Model Railroad Club, 212 S. Alvord St., held their second annual election as follows: President, R. Hodson; Vice-President, J. McLean; Treasurer, W. Suiter; Secretary, A. Johnson, Jr.; Public Relations, L. Polisse. Board of Directors consist of the above officers and Ira Fralick.

After being organized for only one year, the Club now boasts a membership of 20 regular members plus one associate member.

SPRINGFIELD, ILL. The Central Illinois Model Railroad Club has been formed in Springfield. Space for their HO layout has been secured and construction will start when plans have been completed and approved. Meetings are held every Tuesday night in the Club's quarters at 1901 South Lincoln.

WEST ENGLEWOOD, N. J. Hal Carstens of the West Shore Model Railroad Club says his fellow club members are just as "nutty" over these local fan trips as they are with their HO layout. He and his entire crew took in the recent fan trip sponsored by the Joint Railfan Trip Committee on April 20th.

The trip took in the Northern Railroad of New Jersey, from Jersey City to Nyack. This was followed by going out on the freight only, Piermont line, New Jersey and New York to Thiels, Piermont Branch to Suffern. Then Bergen County Railroad after taking the Erie main line. There was a half hour stop-over at the Secaucus roundhouse with plenty of motive power spotted for swell pictures despite an overcast sky. Following this, they went on to the Bergen Tower for inspection.

"The youthful exuberance" (sech 2-bit woids!) of the younger railfans really hit its peak at Spring Valley where five parked locomotives with a full head of steam, provided a chance for the younger fry to try their hand at whistle blowing. Fully half (?) of the townsfolk turned out to see what all the fuss was about. According to Hal, he had never heard anything like it since New Year's Eve in Manila.

BALTIMORE, MD. More on the subject of Two-Rail versus Three-Rail now being discussed in the "Switcher," Club Paper of the Baltimore Society of Model Engineers, Inc. Last month, advocates of the Two-Rail were heard from, with several good points in their favor. This month, however, we find the Three-Rail boys rearing up on their legs with some just arguments. (*Can't say as we blame ya!*) It seems as if the biggest fly in the ointment is the cost of converting a three-rail loco over to two-rail. Taking for example, a Pacific locomotive, with costs of two bucks per driving axle, plus an additional 30 cents per axle for tender wheels or lead truck wheels, we find a typical conversion costing

(Continued on page 48)

DO YOU KNOW HOW TO...

1. Wire a 2-speed Timer?

2. Wire a Dual Ignition?

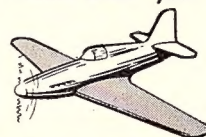
3. Mix a Racing Fuel?



4. Mix a Diesel Fuel?

5. Check your speed?

6. "Trouble shoot" your engine?



7. Select a Prop?

8. Stunt a U-Control Plane?

9. Organize a Model Club?

10. Buy Direct From Us?



All this vital information PLUS a beautifully illustrated personal catalog listing several thousand model items. Kits, engines, parts, accessories, small parts items, raw stock, and a complete line of nationally known model supplies. All this is yours **ABSOLUTELY FREE!** Just fill in and mail the handy coupon. **DO IT NOW!!** Only a limited number of catalogs available.

Please send me your New Catalog and put my name on your mailing list.

Name _____

Address _____

City _____ Zone _____ State _____

MORGAN MODEL SUPPLY Dept. A
3473 Tweedy Blvd., Southgate, Calif.

IT'S NEW-IT'S EXCITING!
THIS BIG COLORFUL BOOK!



FUN WITH LIONEL

MODEL RAILROADING



The Hobby of a THOUSAND THRILLS!!

ONLY
25¢

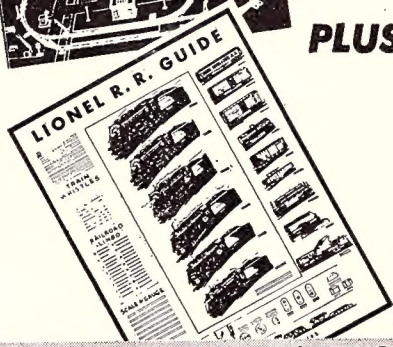
GAMES TO PLAY

- ★ Mystery of the Gold Shipment
- ★ The President's Train
- ★ Fascinating Map Game
- ★ Runaway Wild Cat

MAGIC WIRING

- ★ Exciting Thunder Storms
- ★ Cascading Waterfalls
- ★ Moonlight Scenes
- ★ Fascinating Sound Effects

You have no idea what FUN model railroading can be until you get this new BOOK. It is out of this world, fellows! Full of exciting ideas! New railroad stunts! New wiring tricks! — real railroading mystery.



**PLUS BIG BLUE PRINT LAYOUT
and R.R. WALL CHART**

Send 25¢ Today!

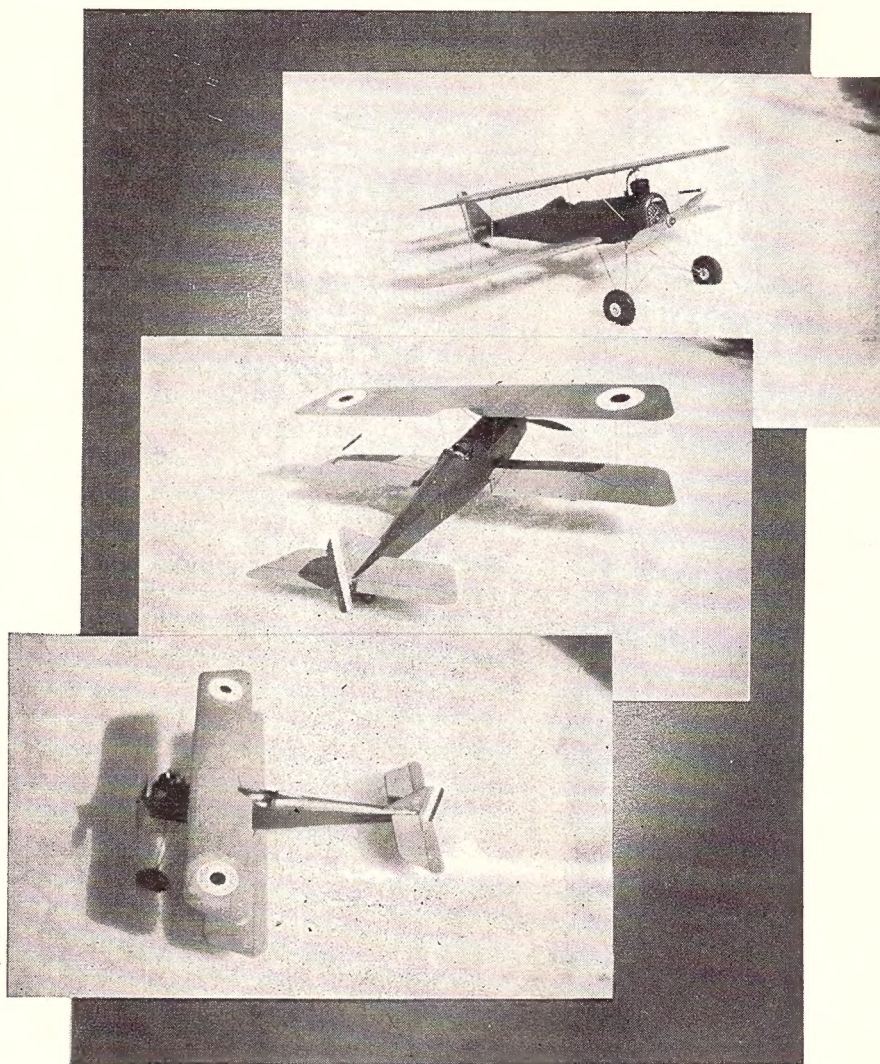
THE LIONEL CORPORATION, Dept. T.T.
15 East 26th St., New York (10), N. Y.

Please send me the new book FUN WITH LIONEL
MODEL RAILROADING. I enclose 25c to cover post-
age and packing.

Name

Address

City Zone State



By JOSEPH FLOR

IF YOU fellas are looking for a stunt job, here it is! A powerful Class B or C motor should be used in this model. It should be reliable as well as powerful, for if the motor "conks-out" during a maneuver, the situation may be much more serious than if it cut out in level flight. A ten inch prop with eight inch pitch is just about right. Any higher pitch propeller will not prove efficient for stunting. This ship has been clocked at 75 MPH, powered with a Tiger Aero. It has to have abundant power to pull it through various maneuvers without stalling. A stunt ship should not only be fast but also very maneuverable.

This model has a built-up construction for the necessity of space and weight. There are two sections which are removable to permit easier access to the motor, gas tank and battery box. These sections are from section A forward to the nose and from section A back to the cockpit. The back section was made removable so that it would not be necessary to remove the forward section when filling the tank.

The gas tank is made up from two flashlight batteries soldered together. It has double the capacity of one that is usually used and the outlet is located half-way up so that the tank will feed until

it is half empty, whether it is upright or inverted. Using this type of tank, the plane can be flown upside down. Two air intake valves are used which proved to be very efficient. One is located on top of the tank and one on the bottom. These valves are zerks, which can be obtained from any automobile store. The bottom is cut off and the spring removed so that the ball bearing is free to move. The center line of the tank should be level with the intake tube or needle valve of the motor. If this is not done, the motor may *lean out* in inverted flight. This type tank has a great advantage as it stops feeding the motor gradually, the motor then missing a few laps and giving you warning before it stops.

A large amount of movement in the control plate is necessary for good control so that the control handle will not be sensitive in the normal flight range.

Movement of the elevator is 90°—45° up from neutral and 45° down from neutral; with this movement, I have successfully done outside loops. The line guide was placed as close to the wing tip as possible to provide good lateral and directional stability. It is also placed *aft* of the center of gravity so that the plane will pull away from the center of the circle and provide line tension without

the use of an offset rudder. The motor is set at a 5° right thrust.

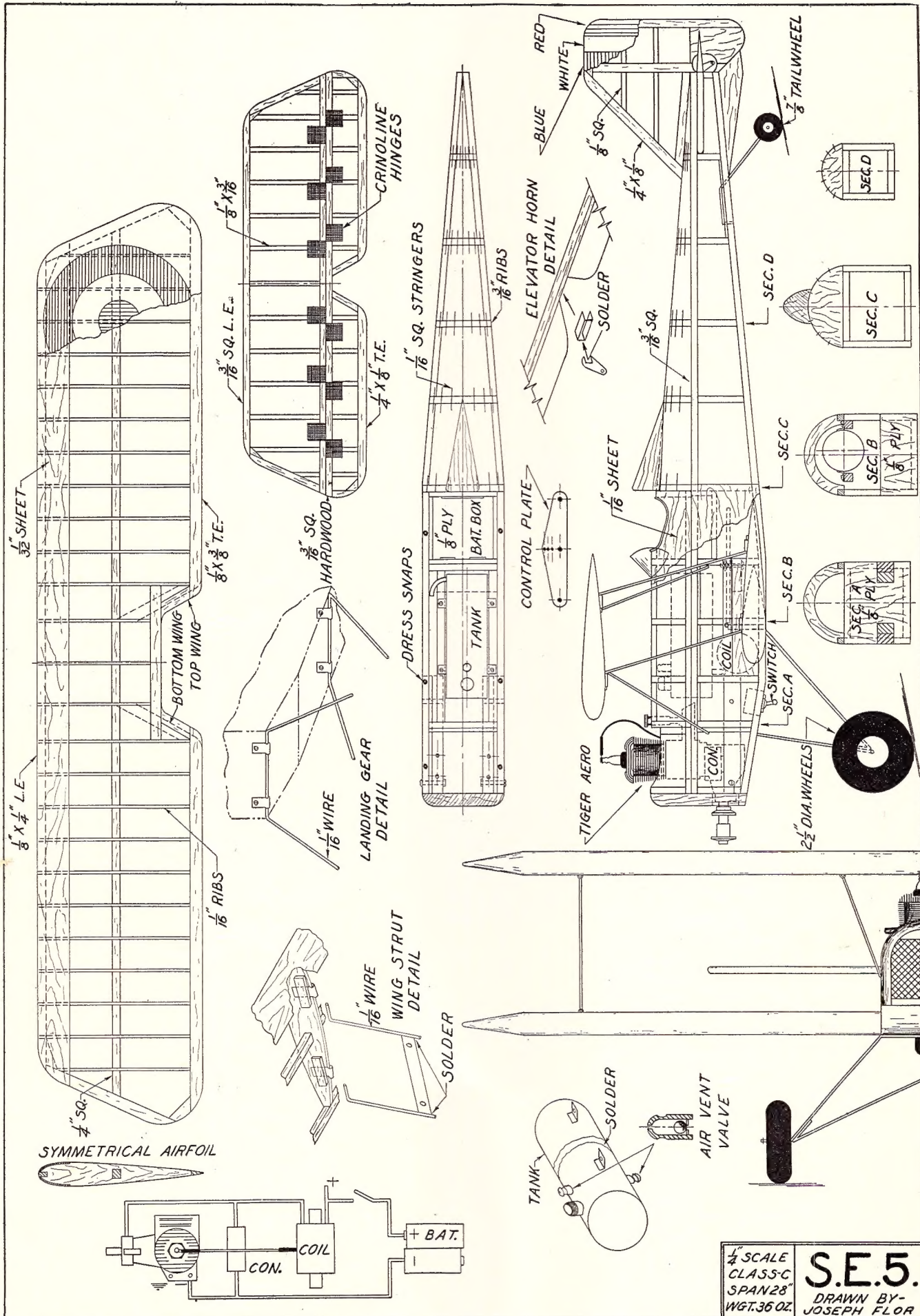
The airfoil used should be the NACA 0012 or 0015. Symmetrical airfoil wings are difficult to build, but prove to be the only type of wing efficient for a stunt plane.

Models for aerobatic flying should be designed with zero incidence as is this ship. If incidence was used, it would be negative when the ship is flying inverted and the fuselage would be at a large angle of attack resulting in increased drag. No dihedral is necessary since the line tension provides lateral stability. A wing is much stronger this way because the spars are not broken by dihedral. Center of gravity should be 25% the chord, for if it is much further back, the model will show bad longitudinal stability.

The plane was covered with silk for strength, for strength is what a stunt ship must have to stand up under the beating it must take. Color scheme is olive-drab fuselage and yellow wings and empennage.

If you have flown U-Control jobs before, you will have no trouble flying this little baby. It is slightly sensitive, but after a few test flights, you will be able to fly it like a veteran!

SE-5 Stunt



SKY-SCRAPERS PLAN ANNUAL CHAMPIONSHIP

THE Sky-Scrapers Model Aero Club of Brooklyn, N. Y., will hold its Fifth Annual Eastern States Championship Meet on August 24th, at Hicksville, L. I. Rain date has been set at August 31st.

Entrants must register at the field before three o'clock at 50 cents per event. Better come early as the contest is limited to 500 contestants. Aside from the usual Class A, B, C Free Flight, there will also be a "free-for-all," consisting of all Classes of Free Flight gas with a 10-minute motor run. No processing or weighing in for this event!

Winners in each event will receive a memorial trophy perpetuating the memory of the three Sky-Scrapers who gave their lives during the past war. For further information on this big meet, contact Arnie Penenberg, 305 Martense St., Brooklyn 26, N. Y.

ALL WESTERN OPEN CHAMPIONSHIPS

THE Second Annual "All Western Open Model Airplane Championships" will be held in Los Angeles, California, June 27th to 29th. No competition will be held on Monday, June 30th, but will feature special meetings, preparation of results and awarding of prizes at the special banquet.

The AMA has sanctioned the meet this year. A special set of model rules for this meet will not be printed since all rules will conform to those set up and published by AMA.

Good news for all the contestants is the fact that a class has been set up for professionals, who will not compete against juniors, seniors or open contestants for prizes. This open meet not only decides the speed kings in the different classes and top free flight man, but will determine the most outstanding model builders, the men who are good in all types of model activities.

sanction of the AMA has been obtained.

Four speed events are scheduled, Class 1 for ships from .0 to .200 displacement; Class 2 for ships from .201 to .300; Class 3 for ships from .301 to .500 and Class 4 for ships from .501 to .650. A stunt flying event and flying scale model event will round out the program.

Winner in each speed event and the stunt flying event will receive \$50 in cash, a large trophy and a gold spark plug. Winner of the flying scale event receives a trophy and motor. Top quality motors and kits will be awarded those finishing second to eighth in each event.

Rules and entry blanks may be obtained by writing J. A. Strobl, Secretary, Louisville ABC Model Club, c/o The Courier-Journal, The Louisville Times and Radio Station WHAS, Louisville 2, Ky. Contestants may enter up to three ships. Entry blanks must be submitted for each ship to be entered. Entries close at midnight, July 12th; no entry fee required.

PROP SPINNERS CHANGE DATE

THE Prop Spinners Club of Long Island, announces a change in plans for their forthcoming 8th Annual Championship Model Airplane Meet. The big event, originally scheduled for August 3rd, will now be held on July 20th at Creedmore, L. I. Through causes beyond their control, their sanction application was acted upon too late, giving another Club precedence over them for a contest on the same date.

The boys are reapplying for a sanction, but vow to hold their contest on July 20th, "sanction or no sanction." Prizes will include the Northeastern Championship Perpetual Trophy for "Meet Champion," trophies, engines, kits and merchandise with a total value of \$500 to \$800. Events will cover Classes A, B and C Free Flight Gas and combined Classes of Towline Glider.

MORE DOPE ON THE NATIONALS

HERE'S further information on the Nationals for 1947 as quoted from Bulletin #2 from AMA Headquarters:

"Under date of April 8, 1947, all members of the AMA Executive Council and Contest Board received a bulletin pointing out that it was then apparent that it would be impossible for all forty-eight states to hold state qualification meets and be represented in the 1947 nationals if they were held on the basis of state qualification originally planned. In addition, it was determined that only a few of the states who have succeeded in planning a 1947 state qualification meet would be able to send state champions to the Nationals, expense-paid. Under the state qualification plan it was felt that it would be extremely unfair for the winners in some states to receive trips to the Nationals unless all states did so. This condition would obviously result in the fact that many state winners would be unable to finance his own way to the
(Continued on page 40)

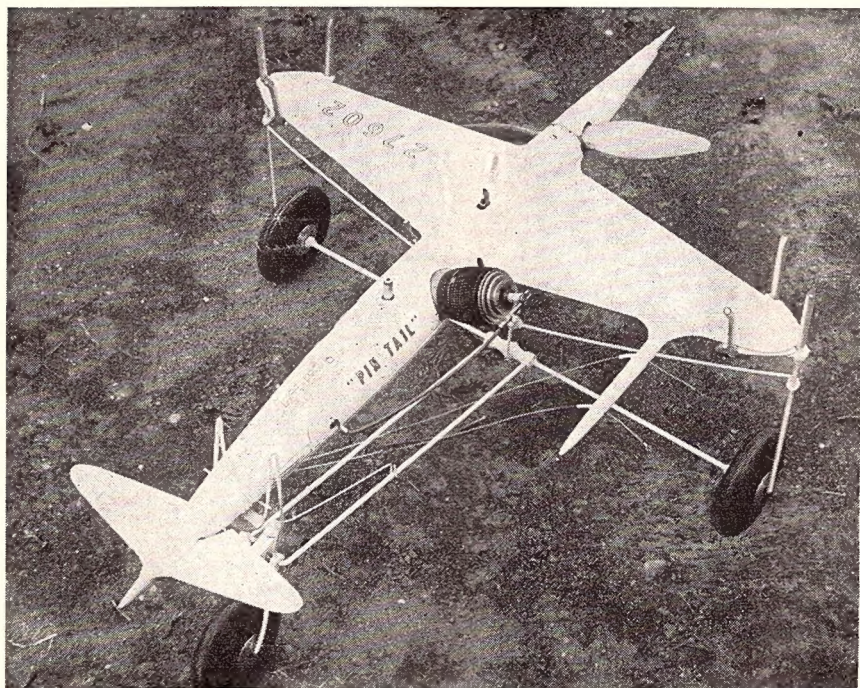


Photo by Graham

Pusher type Class A U-Control plane designed and built by Frank Celauro of the "Air Wheels," Jersey City, N. J.

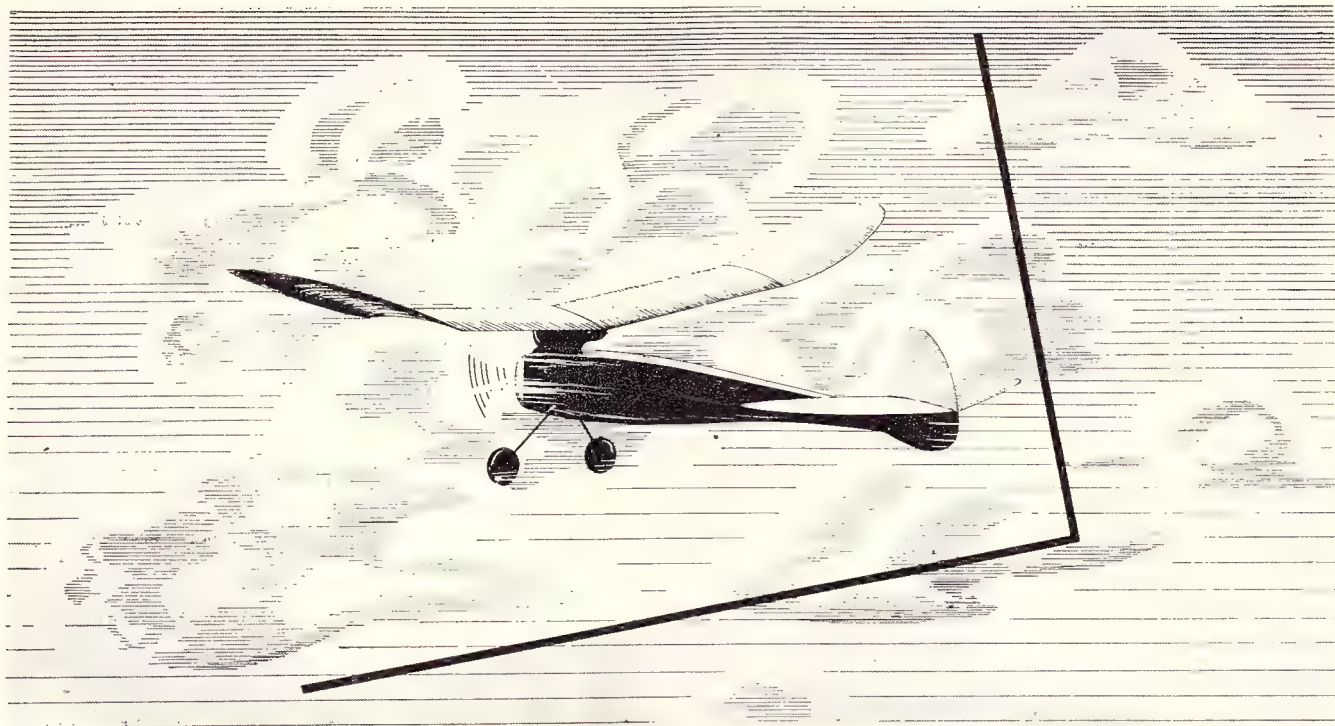
DAVENPORT PLANS TWO-DAY MEET

THE Davenport Model Airplane Club announced that preliminary plans have been completed for a two-day model contest to be held June 28th and 29th. Contest will be Double-A, AMA sanctioned, with events for Rubber, Free Flight and U-Control models. Cash and merchandise prizes of not less than \$500 will be awarded to the winners.

Provisions are being made for meals and refreshments to be served at the grounds, and also lodging accommodations. For further details address your inquiry to Davenport Model Airplane Club, c/o Y. M. C. A., Davenport, Iowa.

LOUISVILLE TO HOLD BIG MEET

TWO HUNDRED FIFTY DOLLARS in cash, six large trophies and thirty quality motors and kits are the prizes offered in a U-Control model airplane meet scheduled for July 25th and 26th in Louisville, Ky. Sponsors of the meet are The Courier-Journal, The Louisville Times and Radio Station WHAS. Competition will be held at Parkway Field, home of the Louisville Colonels baseball club. Night events will be possible under the lights used for night baseball. Newspapers and Radio Station are conducting the meet with the cooperation of the Louisville ABC Model Club. Official



AD ASTRA

By L. E. MARLOW

THIS ship is no more than a simple *box*. We make no claims for any radical developments in design or construction, but do claim that for consistent performance and high flight times it has few equals.

Powered by a Brown C, certainly not a "hot" motor even at that time, it was first flown in the spring of '41. The first full power flight, with a 16 second motor run, hung up a time of over five minutes, and on an overcast day at that! Succeeding calm air flights gave any number of two to four minute flights which the law of averages ruled out as being mere chance.

The Ad Astra has no trophies to its credit, perhaps due to the fact that we do by far the majority of flying purely for our own amazement. It was entered in only one contest, at which we skillfully managed to insert both hands into the prop, fully up to the second joint—and *that's no joke, son!*

By this time you will have scrambled madly for pencil and paper and scaled up the plans—a nasty job, which we've tried to lighten by giving all essential measurements. First dig out your best $\frac{1}{4}$ " sq. hard balsa, which will be used in constructing the fuselage. We suggest hardwood be used for the uprights and cross-braces at the nose of the fuselage, as the removable motor unit is held in position by a plywood or hardwood "plug" which fits snugly into the nose.

Fill in between the first four uprights with $\frac{1}{4}$ " hard sheet, as shown in the pylon attachment detail. The pylon is cut to shape from three cross-grain $\frac{1}{8}$ " sheets, notched to fit and cemented se-

curely in place. Fill in with $\frac{3}{32}$ " sheet as indicated and install the $\frac{1}{8}$ " dowel mounting pegs for the tail, wings and motor unit.

The wing mount is a section of $\frac{1}{8}$ " sheet 2" wide, applied with the grain running *across* the fuselage. Cement to the front, back and sides of the mount $\frac{1}{8}$ " sheet formers conforming to the airfoil section and dihedral angle. The wing should be set at an angle of five degrees in relation to the thrust line shown on the side plan view.

While on this subject, the "thrust line" shown is really a reference line to aid in laying out the plan. The engine is actually installed with four degrees of down-thrust.

Wing construction is simple and entirely conventional, $\frac{1}{4}$ " x $\frac{3}{4}$ " and $\frac{1}{4}$ " x $\frac{1}{2}$ " spars being pinned to the wing plan view and the ribs, tip, leading and trailing edges cemented in place. Build two opposite halves and assemble, using rock hard $\frac{1}{8}$ " sheet gussets to reinforce the spars at all dihedral joints. Cover center section with $\frac{1}{16}$ " sheet on both top and bottom.

Stabilizer and rudder construction also follow conventional practices. Two center ribs are employed in the stabilizer, spaced $\frac{1}{4}$ " apart. Center section is covered top and bottom with $\frac{1}{16}$ " sheet, leaving open a $\frac{1}{4}$ " slot in the top, into which the rudder is cemented.

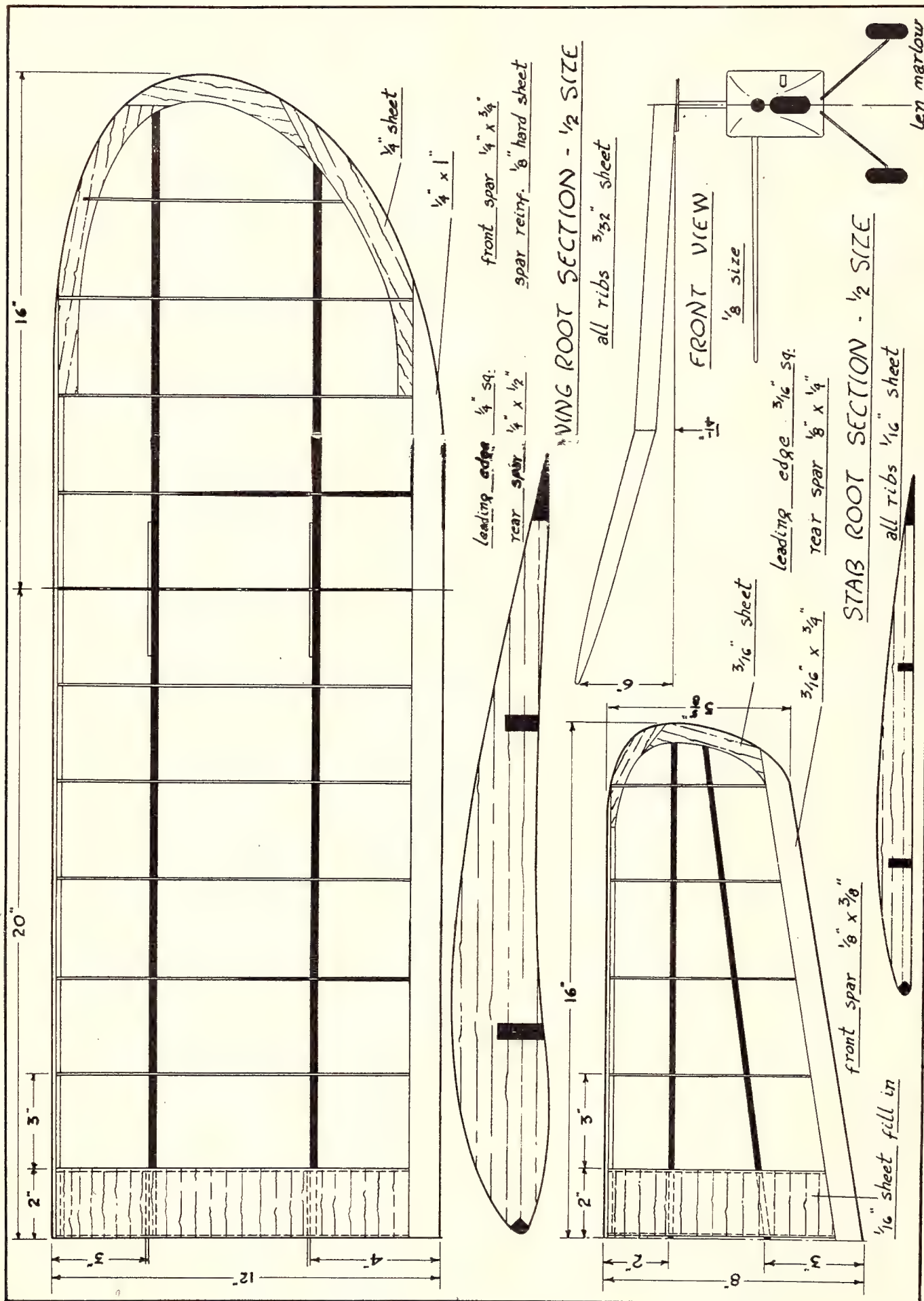
The firewall is cut from $\frac{1}{8}$ " plywood, and a plywood or hardwood plug conforming to the inner measurements of the nose of the fuselage is cemented to the rear of the firewall. Landing gear is

formed from $\frac{1}{8}$ " steel wire and secured to the firewall by a heavy sheet metal clamp. Another strip of sheet metal $\frac{1}{2}$ " x 1" is bent at right angles. Fasten one side to one of the bolts holding the landing gear clamp, and bolt the other to the battery track. Rear of the battery track is supported in a piece of hard $\frac{1}{8}$ " sheet cemented between the fuselage uprights. Formed aluminum or steel mounts are bolted to the firewall.

The ship was originally flown with the motor in an upright position, sticking right out in the breeze. Eventually, we made a slight concession to appearance and reduced drag by inverting the motor and cowl it in. Our own preference would be to cement blocks and sheets together, carving and sanding to final shape. All of the plastic methods we've tried to date have involved too large an expenditure of time, effort and money, or have produced an unsatisfactory finished product.

For covering, we suggest two cross grain layers of silkspan, using heavy grade on the fuselage and rubber grade on the wing and tail surfaces. Apply both layers *before* doping. The added weight of such a method is negligible, particularly when you consider that the strength of the covering is at least tripled, and that the tendency of the silkspan to develop those long, discouraging splits on impact is eliminated.

Virtually any Class C engine may be installed, although we do not recommend anything as *hot* as the Hornet or McCoy. Remember to check all surfaces for warps and to increase your power gradually!



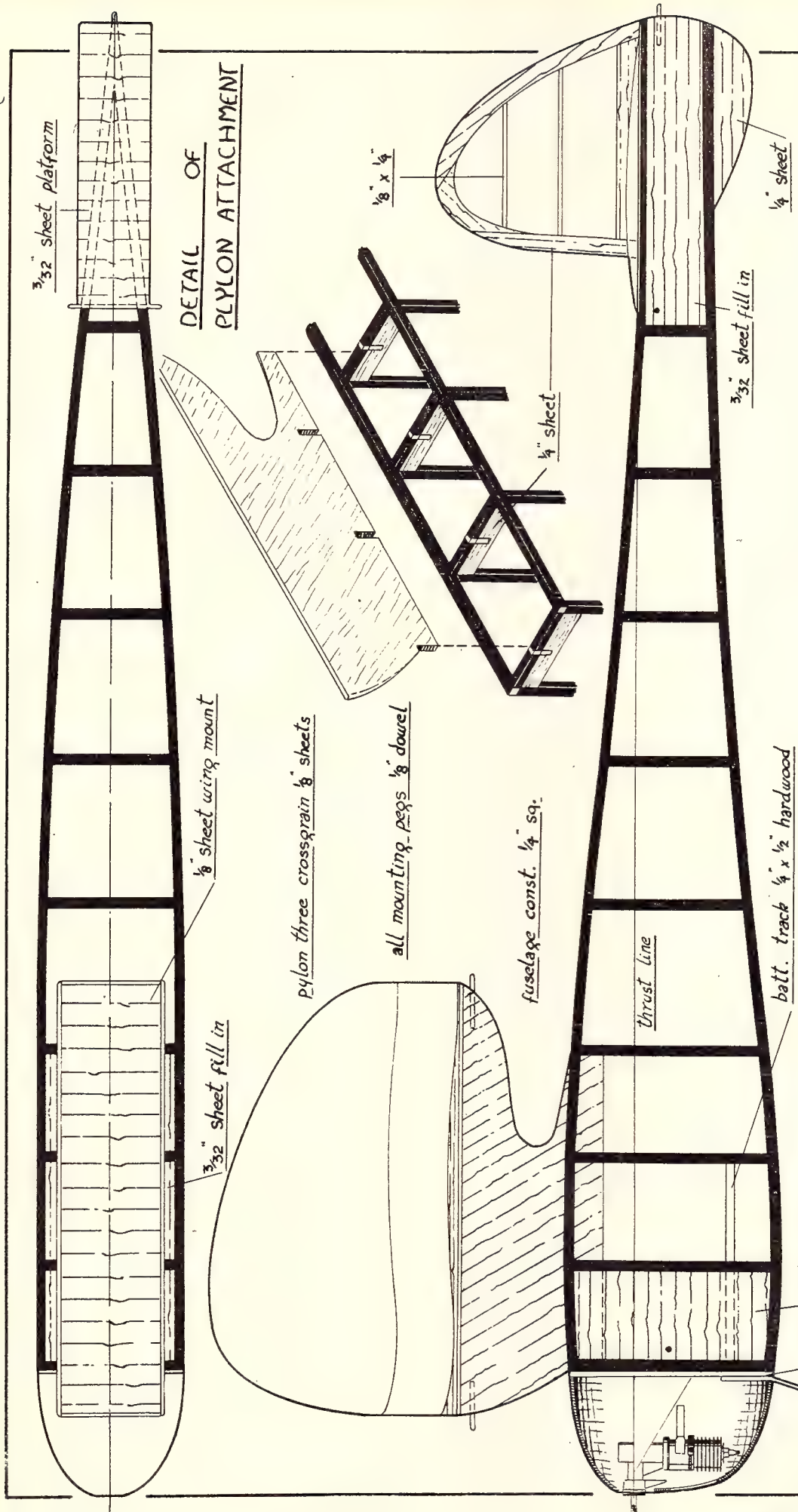
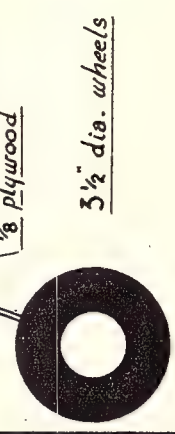


TABLE OF FUSELAGE MEASUREMENTS - inches

STATION	1	2	3	4	5	6	7	8	9	10
HEIGHT-above T.L.	$1\frac{15}{16}$	$1\frac{15}{16}$	$1\frac{5}{16}$	$1\frac{3}{4}$	$1\frac{7}{16}$	$1\frac{3}{16}$	$\frac{5}{8}$	$\frac{3}{8}$		
HEIGHT-below T.L.	$3\frac{3}{8}$	$4\frac{1}{16}$	4	$3\frac{3}{4}$	$3\frac{3}{4}$	$2\frac{3}{8}$	$2\frac{8}{16}$	$2\frac{5}{16}$	$2\frac{3}{16}$	2
WIDTH	4	4	4	4	$3\frac{15}{16}$	$3\frac{3}{4}$	$3\frac{5}{16}$	$2\frac{3}{4}$	2	$\frac{1}{4}$
LENGTH	50 to front of prop									

AD ASTRA

SCALE $\frac{1}{4}$ " = 1" EXCEPT AS NOTED



MODEL POWER BOATS

By BOB GRAHAM

A GAIN we present some pertinent data for the beginner and expert alike. Various types of bridle hook-ups are illustrated in Fig. 1, as used by different speed boat builders. Much can be said for and against each type of hook-up, however each type is reliable and is left entirely up to yourself as to choice. In the Eastern Circuit, the distance from center of the boat to the loop or ring at the end of the bridle is four feet, six inches long. In Detroit, this same dimension is four feet.

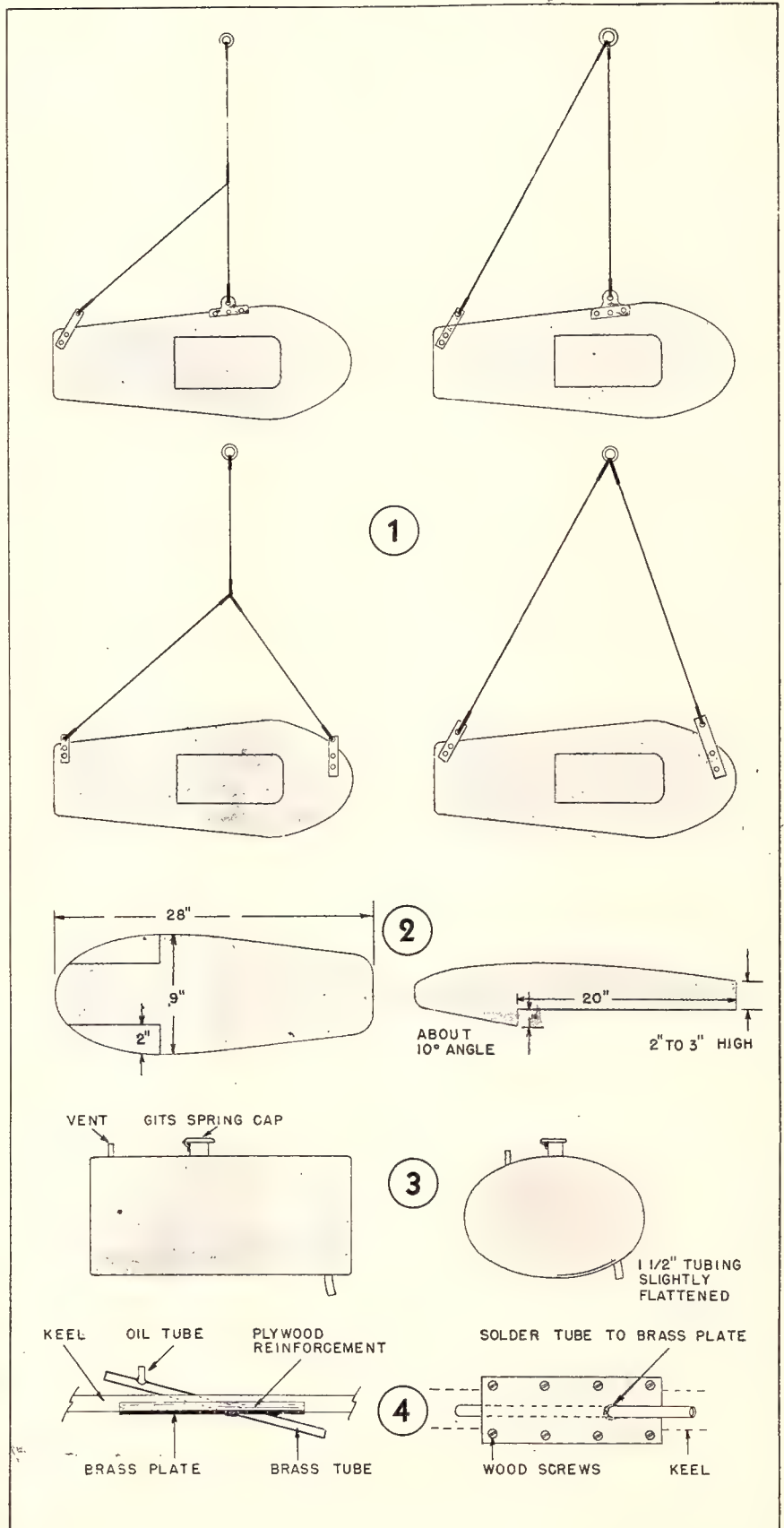
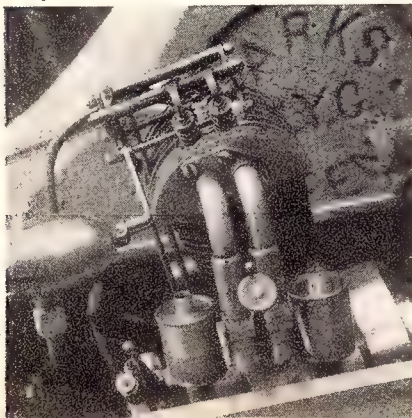
In Fig. 2, we show some basic dimensions for the surface propelling type of hull. These dimensions may be modified of course, but you can't go wrong using those shown. The distance from bottom of the boat to the center line of the strut hub should be roughly one inch. The propeller should project about half an inch from the stern. Ready to run, the boat should balance about six to seven inches behind the step. Propeller thrust line should be about zero degrees but this may have to be varied for correct planing. Every boat acts differently even when built from the same design.

Now getting on to fuel tanks, we see a type used by this writer in Fig. 3. The ends are brazed on and the fittings soft soldered. Drill holes for the fittings before putting on the ends. Make certain the outlet tube is on the outside of the running circle as centrifugal force will keep the fuel there when the boat is running. This writer mounts the tank at boat center in front of the engine. By means of a 6-32 screw soldered to the tank top, it may be fastened to an aluminum strip which is bent around the tank and secured to the engine bed.

Fig. 4 illustrates the shaft tube which is soldered to the brass plate after the shaft is lined up with strut and engine. The brass plate is then screwed or bolted through the bottom of the boat to plywood pieces laid on either side of the keel. For an easy method of making the hole through the keel for the tube, simply heat a rod red hot and push the pointed end through. It will take a few tries, and if the wood ignites, just blow it out. This hole should be made before the bottom is put on, as it facilitates watching the angle.

Class B engine designed and built by Henry Parohl of the New York Club. A 30 cc., 4-cycle engine with 4 valves and 2 carburetors.

Photo by Graham



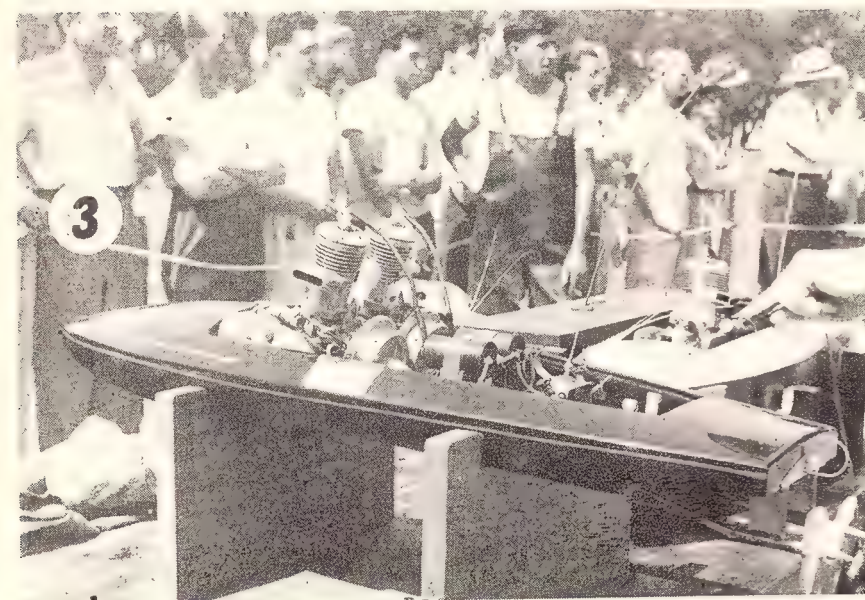
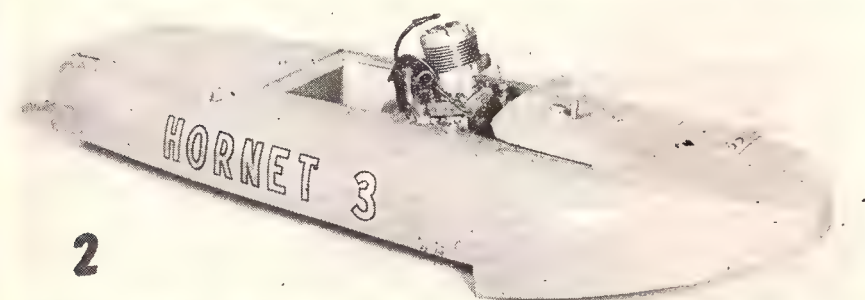


LEGION TO STAGE MEET AT CINCINNATI

THE American Legion of Hamilton County, Ohio, are sponsoring the biggest Model Airplane Contest ever staged in the Cincinnati area. The contest will be sanctioned by AMA and will be held at the Lunken Airport on June 21st and 22nd, open to all enthusiasts from Hamilton, Clermont, Butler, Brown and Warren Counties of Ohio.

The Legion plans a gigantic affair as they have a campaign for advertising the meet to every boy and girl in the county. Dealers are cooperating in every way possible. Their publicity includes radio programs, newspaper articles, street car cards, school programs and Scout programs! The City of Cincinnati is really behind the program and loaning every facility possible. The Army at Wright Field in Dayton is also cooperating and will stage a demonstration on both days. They also plan to send down for display radio controlled equipment, jet planes and other interesting displays.

Entire meet will be under the supervision of Mr. L. R. Aichholz of the American Legion; Bill Oker, Regional Co-ordinator of the AMA; and Milt Specter, Regional Contest Director of AMA. Prizes will be awarded at a banquet to be held following the meet. All winners will be guests of the Legion and their families invited to attend.



Class E stock engine powered boat designed and built by Ray Seavey, of Philadelphia, Pa.

1. Roy Buress (left), of Baltimore, and John Stuffers, of Philadelphia, with experimental boats they designed and built, with modified power plants using two engines geared together. Oddly enough, neither knew the other was working on such a design.

2. Latest Class D boat designed and built by Bob Graham, member of the New York Club. The 10 c.c. engine is equipped with a magneto designed and built by Joe May, of Detroit.

3. This boat was built by Stan Landell, of Lansing, Mich. He powers it with two super cyclone engines geared together and driving two propellers.

CORRECTION

In the May article on "Hull Development," Fig. 2 is a V-bottom hull and should have a line from the bow to the step. Fig. 5 should show a straight line from pontoon to stern instead of a curved line as shown.

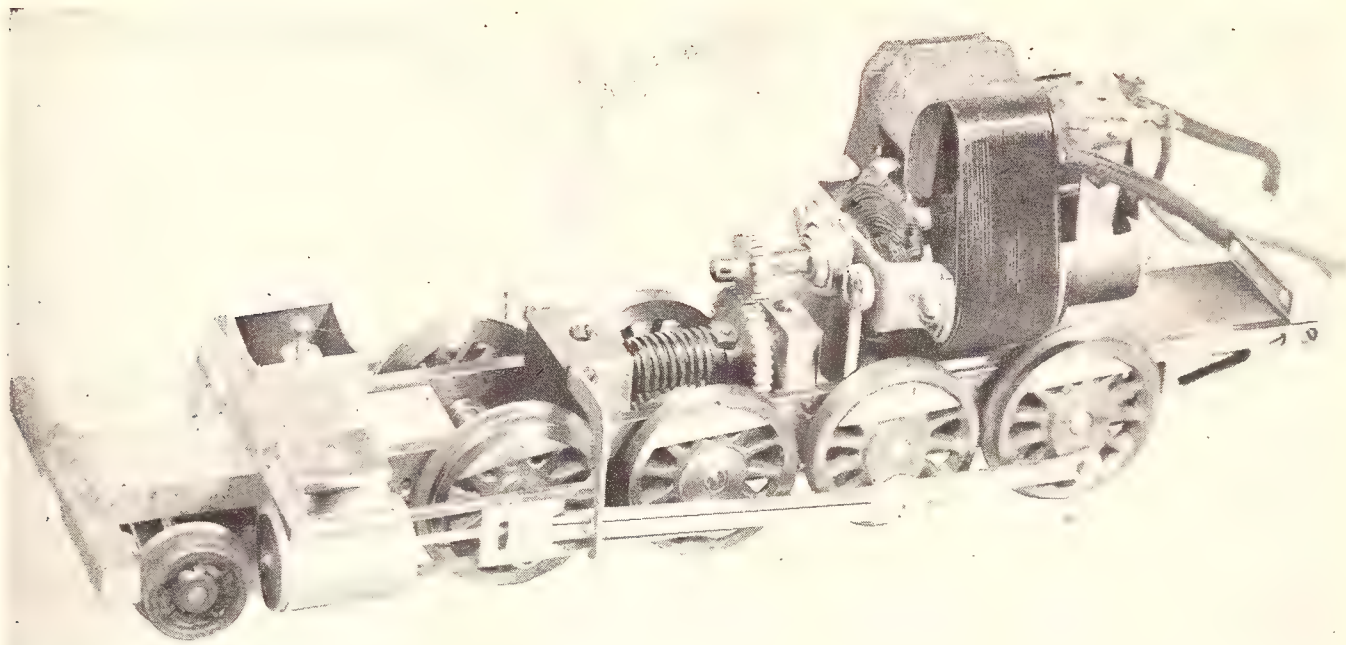


Photo by Price

DL&W Consolidation

By WARREN B. CRATER

PART II

WITH the cylinder dimensions developed in scaling down this engine, $\frac{3}{4}$ " square brass tubing is readily adaptable as a base. Take a piece of this stock $2\frac{3}{8}$ " long; select one surface to be the top. Lay out center lines on top, front and back faces. (Note the cylinder centers are $\frac{3}{8}$ " below top face.) Scribe center line across top face and down the front and back. Lay out cylinder centers $\frac{13}{16}$ " from center line on front and back. Lay out the steam chest centers $\frac{13}{16}$ " from center line on top face. Cylinder center holes are drilled #43. Lay out the frame seat in front and back, top of seat being $\frac{1}{16}$ " (thickness of tube) below top face; width is $\frac{3}{4}$ " to fit on front extension of main frame. Drill #48 and tap 2-56 at centers in top face.

The saddle is a piece of the same tube stock soldered to the main section and cut to $\frac{13}{16}$ " radius to receive the boiler. Steam chests are cut from brass stock to $\frac{3}{16}$ " x $\frac{9}{16}$ " x $\frac{9}{16}$ " and their covers to $\frac{1}{16}$ " x $\frac{5}{8}$ " x $\frac{5}{8}$ ". Drill #43 at center of each piece. Round the top edges of the covers and secure to main section with 2-56 round head brass screws.

Cylinder heads are turned from brass stock and finished to $\frac{5}{8}$ " diameter. Drill centers #48 and tap 2-56. Part off $\frac{1}{16}$ " thick. Hold the cylinder heads in position on the main section with long screws and solder at inside edges where it is less noticeable.

Cut out the frame fit and remove excess from bottom. File to finish, even with cylinder heads. Cut a long strip of tinplate or thin brass just over $\frac{3}{4}$ " wide. Bend to shape, covering the opening at sides of cylinders, starting from the top

face of the tubing and following cylinder heads to just beyond bottom centers. Cut off the excess metal and solder in place, preferably from the inside. *There is your cylinder and saddle, almost as easy as buying a casting!* The long screws are now removed and replaced with short screws from the inside through the front heads. File these flush. Scribe vertical center lines on the back heads and mark guide centers $\frac{3}{16}$ " above and below cylinder centers. Drill #53 and tap 1-72 for the guides.

Guides are $\frac{1}{16}$ " square and drill rod should be used to give that bright steel appearance. Guides are cut $1\frac{3}{8}$ " long with an additional $\frac{1}{8}$ " allowed for threading. File off the corners of this extension (need not be perfectly round) and thread with 1-72 die. Screw in place in the back cylinder heads.

Next comes the guide yoke or bracket which secures the back ends of the guides to the frame (see sketch.) These are best secured to the bearing block in front of the worm shaft. Lay out the guide yoke on $\frac{1}{32}$ " brass sheet; cut and bend to finish dimensions. Screw this to the bearing block and solder back ends of guides to the yoke. File off excess solder to permit movement of the crossheads.

Crossheads are essentially $\frac{1}{32}$ " brass sheet, cut to resemble the outward side of the real thing, with a shoe soldered inside to run on guides. Drill the shoe to receive piston rod ($\frac{1}{16}$ " round nickel silver or steel rod) and solder to cross head proper (see sketch). Now file out the shoe to fit the guides, using edge of a small flat file. For the wrist pin connection to the main rod, drill #43.

For the main rods, use $\frac{1}{16}$ " x $\frac{1}{4}$ " brass strip as a base. Lay out and center punch

for wrist pin and crank pin centers. Drill #48 and tap 2-56 for wrist pin; drill back end for the crank pin. To simulate the brass at the back end, solder a piece of $\frac{1}{32}$ " thick brass in place. To simulate the flanges of the I-section, solder #60 round brass rod $\frac{1}{32}$ " in from each edge. File off the base stock even with the round stock and then file the face to give that true I-section appearance. Use round head screws as wrist pins; cut off excess and rivet inside main rods. File heads down to depth of the slots.

Position the guides with pistons in holes at centers of the back cylinder heads. Connect back ends to #3 crank pins to complete the running gear. Now turn the motor by hand for one revolution of the driving wheels and check for all clearances.

Use a piece of $\frac{1}{4}$ " x $\frac{1}{4}$ " brass angle across back end of main frame to which the expansion sheet may be attached and to carry back boiler head. The reversing switch may be mounted on top of frame between this and the motor. Extend operating handle to make it accessible when the boiler is in place. Wire the switch, leaving a lead for third rail collectors on both engine and tender. The collector on the engine may be mounted on a fibre block to extend out between #2 and #3 driving wheels.

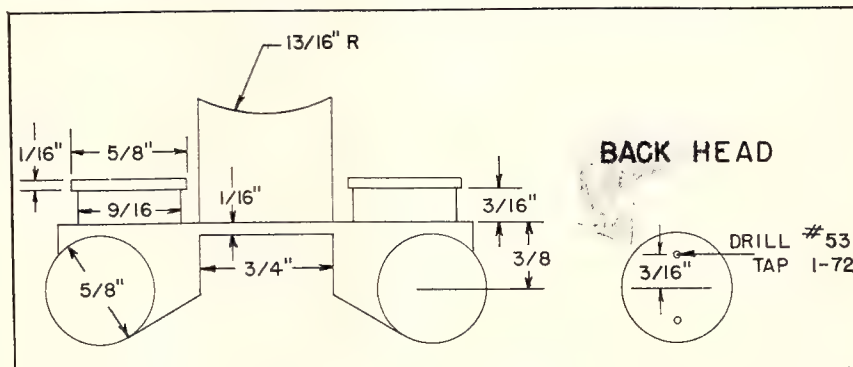
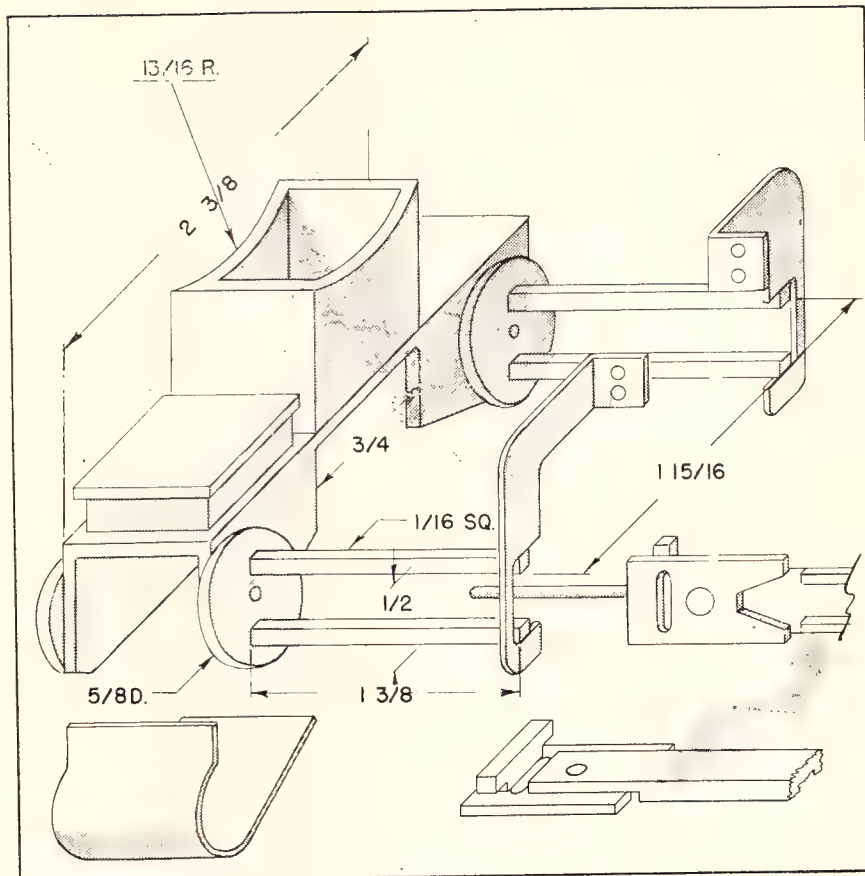
The engine truck frame is cut from $\frac{1}{2}$ " x 1" brass channel (see sketch). The fulcrum and spring guide are tapped into the front frame extension. Lay out the truck frame on channel stock and drill fulcrum hole #43. The radial slot is laid out on a 1" radius swung from the fulcrum. Drill a series of $\frac{1}{8}$ " holes (to clear $\frac{3}{8}$ " O.D. tube on guide screw) and finish slot with files. The axle holes must per-

mit free running. If stock wheels are used, one wheel may be pressed off the axle for assembly. The sleeve on the spring guide should be sufficiently long to permit truck wheels to run on the rail, but must clear the rail at switches and crossings. When mounting to the frame, the sleeve should be screwed up tight. A length of spring should be utilized so as to place a small portion of the engine weight on the truck. Top of the spring pushes against the frame, while the bottom pushes against a washer which rides the truck frame.

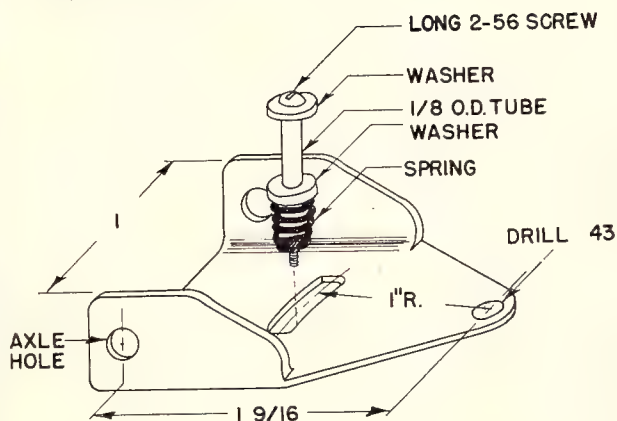
The entire assembly up to this point may be run on the track for testing.

If you wish to make your own reverse switch (see sketch), it can be built into a short piece of $\frac{1}{2}$ " x 1" brass channel. A block of hard fibre, drilled and tapped for short 2-56 screws, supports the three top contacts. The bottom contact at center (opposite top center) is soldered to web of channel. The rotor is made up of $\frac{1}{4}$ " round fibre; drill #48 through center and tap 2-56 for $\frac{1}{4}$ " at each end. Contacts are cut from $\frac{9}{32}$ " O.D. brass tube as shown in sketch. Press in position with extensions directly opposite on the fibre rotor. A short 2-56 screw supports one end of the rotor, while a long one supports the other. Solder a piece of brass rod in slot of long screw for a handle. It is obvious, when one contact of the rotor connects bottom to top right, the top center is connected to left top. A half turn reverses and a quarter turn breaks both connections. In wiring, connect right and left to motor brushes, top center to one side of motor field and other side of field to collector shoes. With bottom contact grounded to frame, the circuit is completed.

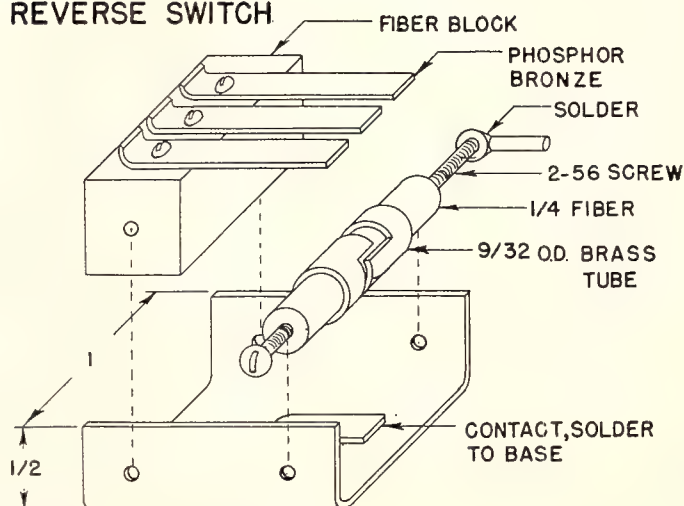
The tender frame is a simple cut and assembly job of stock size brass, side sills and breast beams being $\frac{1}{4}$ " x $\frac{1}{4}$ " and other members $\frac{1}{4}$ " x $\frac{3}{8}$ ". As you cut this stock, clean it preparatory to soldering. Dimensions are shown on the accompanying sketch. This is shown upside down to illustrate the assembly, which must be this way due to the coupler pocket. Cut two pieces of $\frac{1}{4}$ " x $\frac{1}{4}$ " to $5\frac{5}{8}$ " long for



ENGINE TRUCK FRAME



REVERSE SWITCH



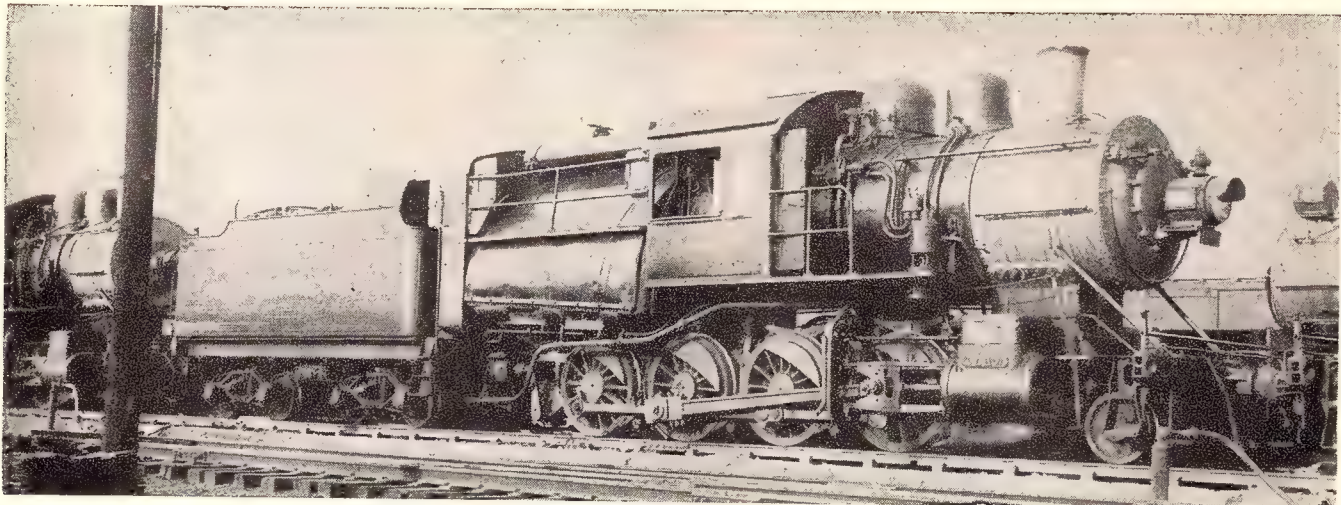
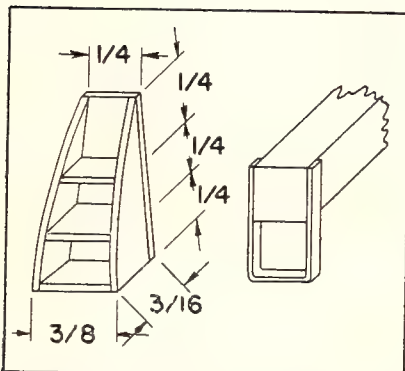
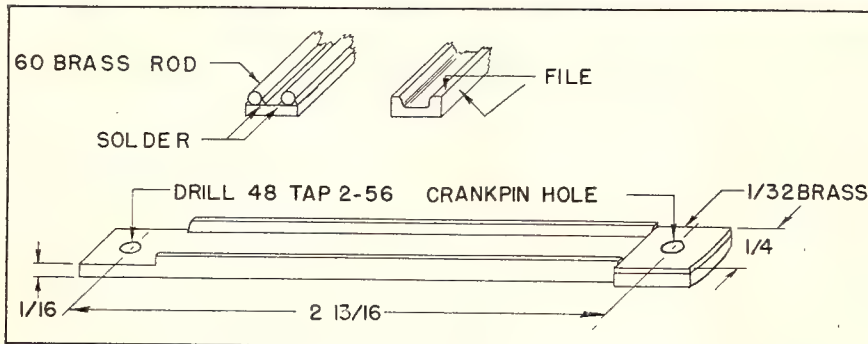


Photo by Lucas

This Consolidation for your O-gauge freight line is copied from the prototype of the Lackawanna, numbered in the 890's.



The steps shown above should be soldered in place while tender frame is still in inverted position. With the use of a few nails and flat board, the frame is easily soldered up "true and square."

The author has used a clever method of making fluted rods as shown above. A simple soldering and filing job, and you'll have realistic rods!

the side members and nail to a flat board using short nails, so located to permit necessary soldering. Maintain the overall width of $2\frac{1}{8}$ ". Breast beams should be centered across the ends and checked with a square. Cross members should be cut and set in place at truck centers. *Note: Dimensions shown here are to centers.* The other inserts provide attachment for draw bar and coupler on longitudinal center line. Coupler pocket should be cut from stock, drilled and tapped for carrying iron screws. Hold to breast beam with a wooden strip as shown in sketch.

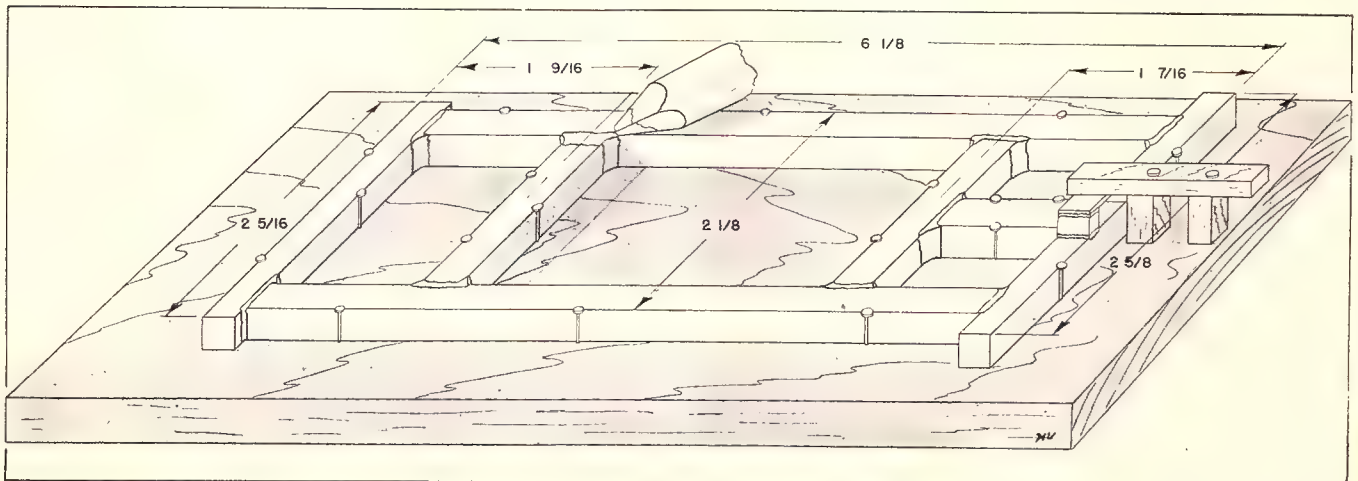
Stirrups steps, $\frac{1}{64}$ " x $\frac{1}{16}$ " brass (box

car steps), should be prepared and soldered to the frame during the assembly soldering. The cast steps on front breast beam can be built up from sheet and soldered during assembly or screwed in place later.

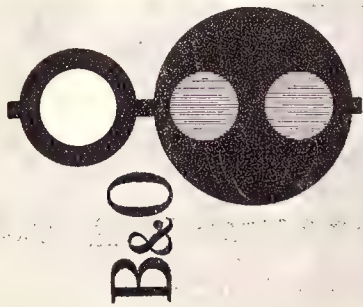
With this set-up screwed to the board, put soldering paste around all joints. Flow solder in with a large iron, allowing a fillet to build up inside each angle of completed frame. Do not allow any excess of solder to collect on the outside where it will show on the finished model. When cool, remove from the board. Shims will be necessary to build down to the truck bolsters. Use Arch Bar trucks, and shim to give a dimension of $\frac{1}{8}$ " from rail to top of frame.

Make up the carrying iron, $\frac{1}{32}$ " x $\frac{1}{4}$ ", and screw to coupler pocket. Drill and tap a hole into the frame member for the coupler shank screw. Make up the draw bar, about $1\frac{1}{2}$ " center to center, and provide for its connections in engine and tender frames, preferably shouldered screws. Locate properly to maintain $\frac{1}{4}$ " clearance between frames, unless very sharp curves are to be traversed which will then necessitate greater clearance. Dimensions shown permit use on curves of three feet radius.

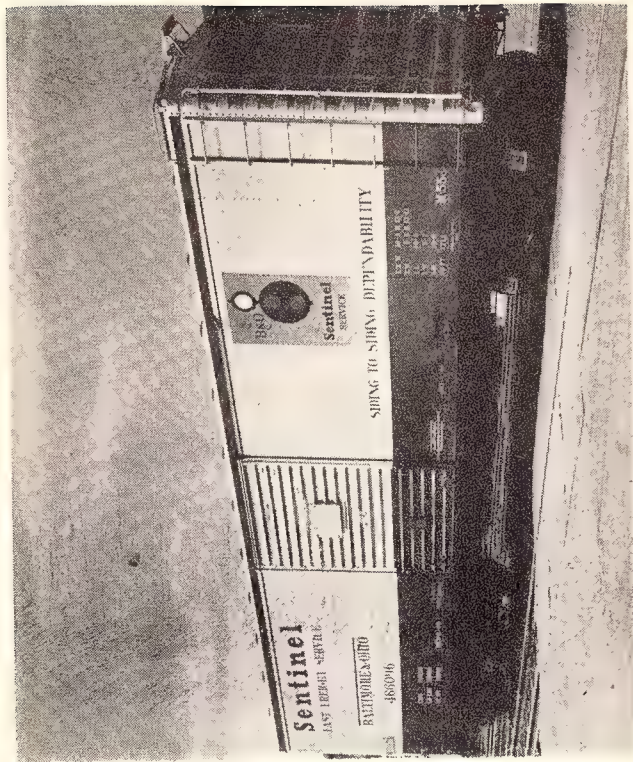
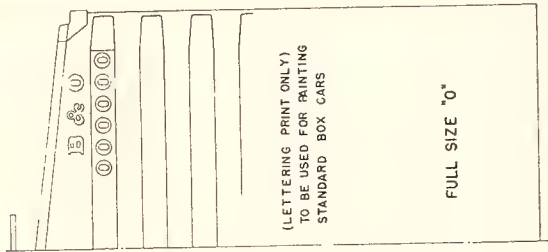
(Continued next month)



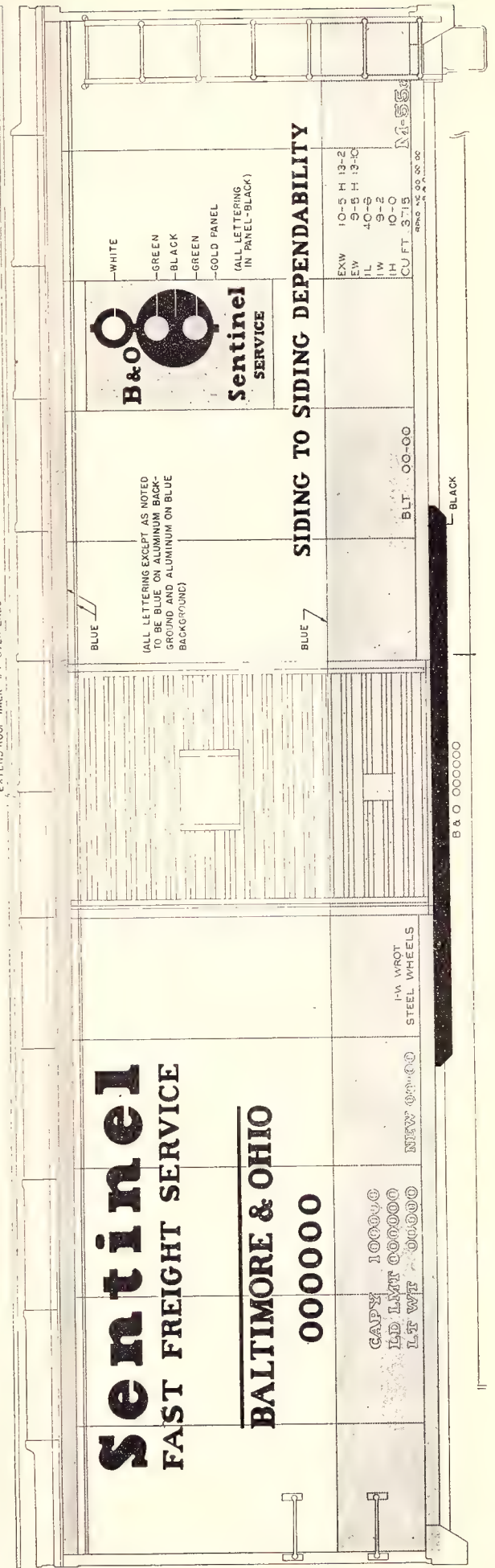
Sentinel car

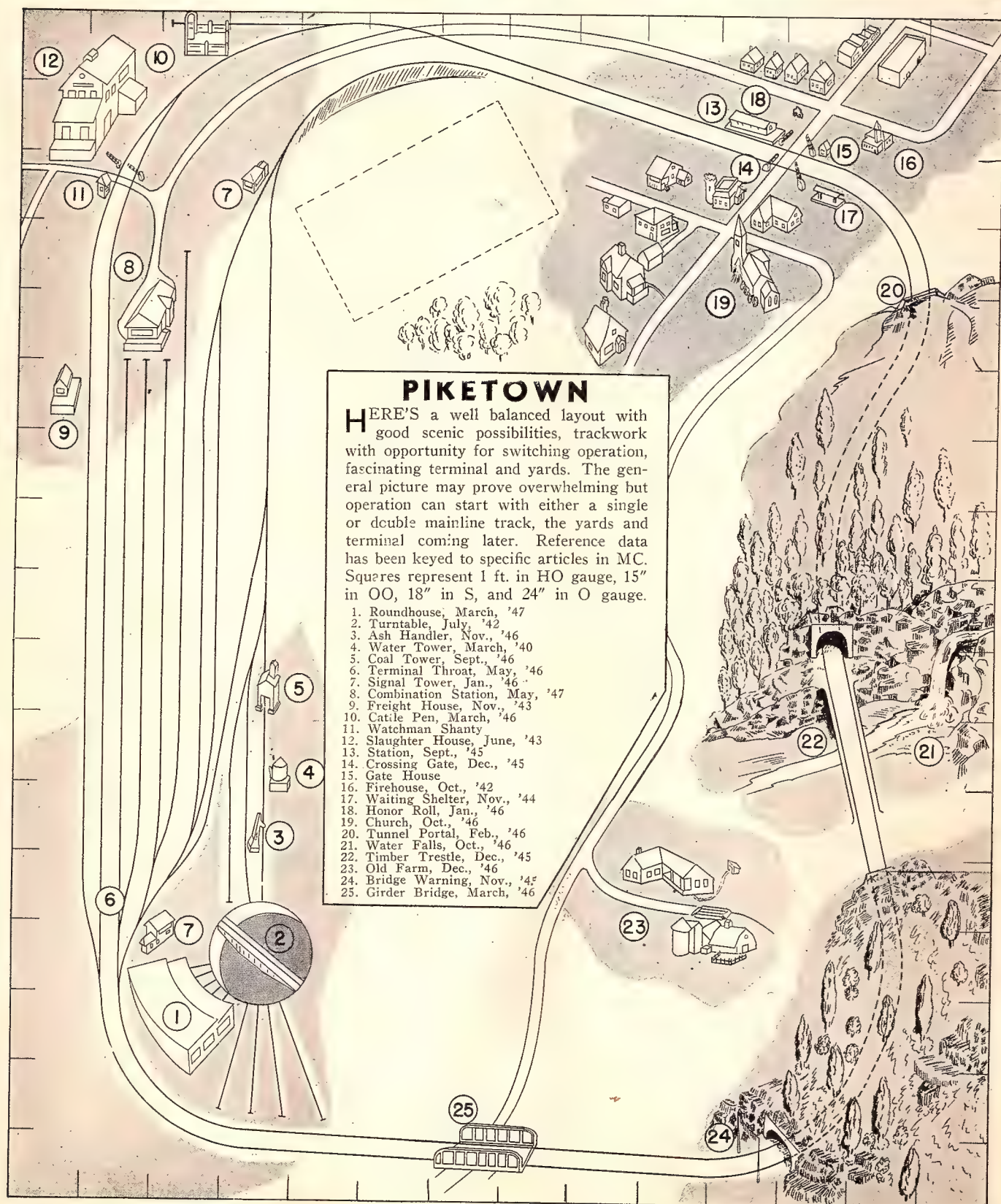
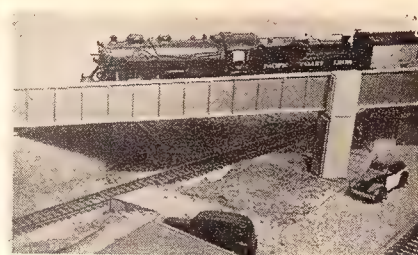
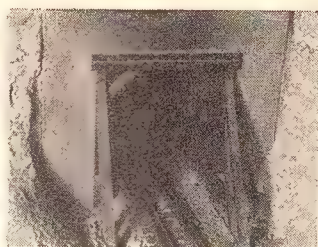


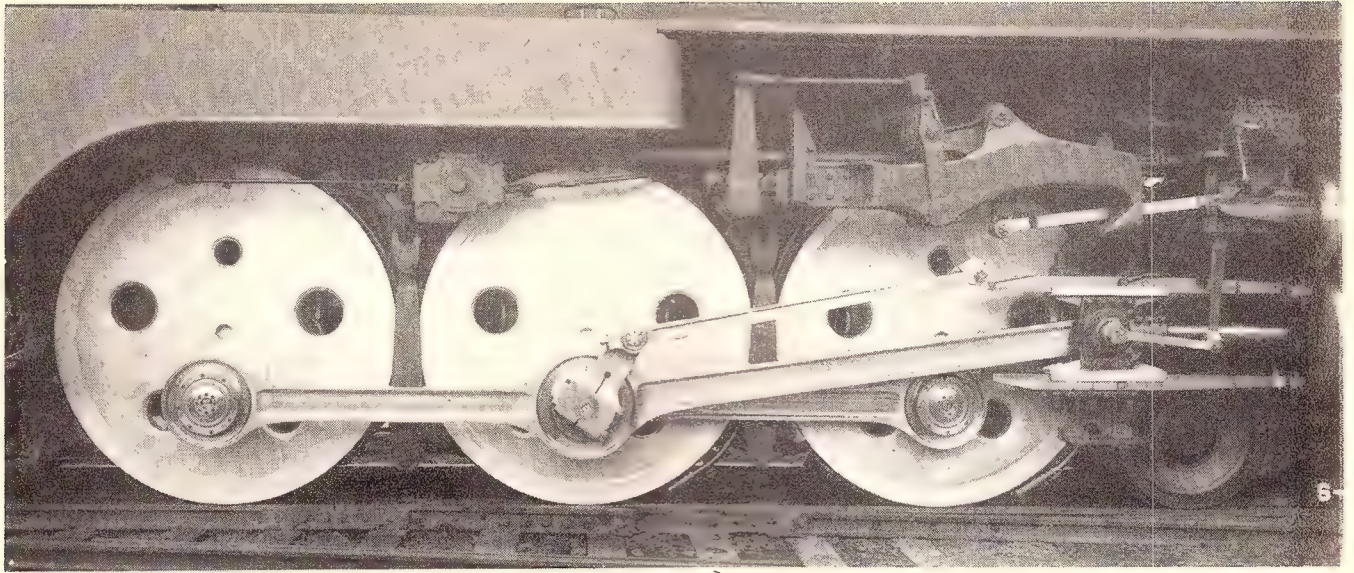
TO KEEP your model railroad up to date with modern freight practice, add a few of these Sentinel Cars of the B&O RR. These cars will add distinctive color to your pike and carry a meaning to those who know their railroading. This specialized service was only recently introduced as a modern method of handling fast freight, insuring a dependable siding-to-siding service. Each car receives constant supervision by a "Sentinel" who follows all fast freight in transit by means of teletype. With this system, shippers and receivers are now notified prior to shipment when cars will arrive, saving considerable time.



EXTEND ROOF WALK 1/4\"/>







Baker Valve Gear on one of New York Central's Hudson locomotives.

New York Central Photo

BAKER VALVE GEAR

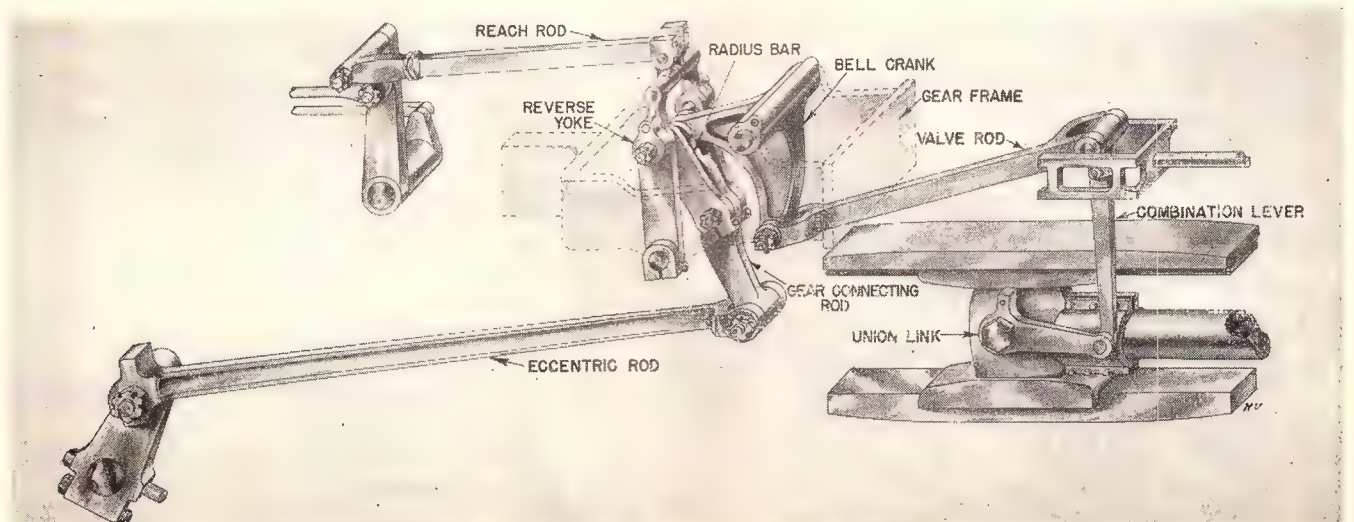
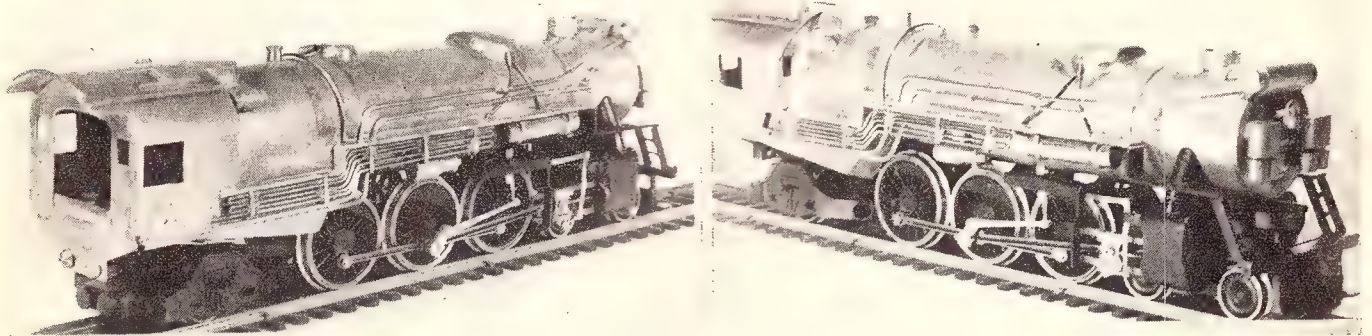
ONE of the most intricate parts of any locomotive is the valve gear, the working mechanism that transmits the power of steam from the cylinders to the massive drive wheels. It is not only complex in nature but most fascinating to observe, as it goes through its

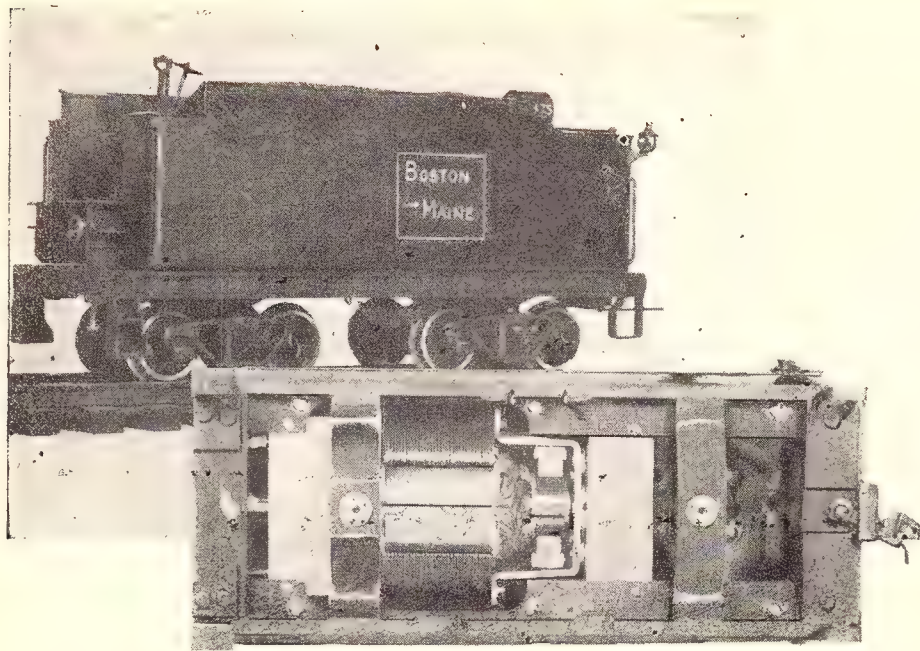
involved motion as regular as clockwork.

Most model builders find their "Waterloo" when it comes time to model this section of their pet locomotive. This may be partially due to the fact that it is complex, but more often we believe it comes from lack of familiarity with the

different types of valve gear. To have a working knowledge of the various functions performed by this mechanism, will certainly prove to advantage when it comes time to add this detail to your model. Of the several types in common
(Continued on page 48)

Two views of a model Pacific locomotive using a modified Baker Valve Gear.





Boston & Maine Mogul

By LEWIS AUSTIN

PART FOUR

AFTER completing your locomotive, the tender should be fairly simple. With the exception of dummy coal, it is made entirely of brass. The reverse switch is hidden under the hinged manhole cover.

Construction starts with the built-up underframe made from brass. Looking at the perspective, you will see that the end beams are lengths of $\frac{1}{4}$ " square brass. Two lengths of O-gauge rail are soldered to the end beams to represent channeled sides of the underframe. Solder $\frac{1}{2}$ " wide strips of $\frac{1}{32}$ " thick sheet brass along the tops of the underframe sides. Also note that the lengths of rail are mounted upside-down, the thin base of the rail being at the top of the underframe. Solder these strips in place. Now file away just sufficient material from the strips to clear the motor.

Front tender steps are filed to shape from brass with the openings cut directly through. Note in the front view how these steps are mounted to the end beam with angle pieces bent to shape from $\frac{1}{16}$ " thick sheet brass. The brackets also close up the backs of the openings in the steps. Rear steps are bent to shape from $\frac{1}{8}$ " wide strips of $\frac{1}{32}$ " brass and soldered in place in slots cut into the end beam.

Cross beams or body bolsters are filed to shape from $\frac{3}{8}$ " thick brass. Note the front bolster is cut out to clear the motor, shown by the dotted lines. Solder the

cross beams in position. Cut two $\frac{1}{2}$ " wide strips of $\frac{1}{16}$ " thick brass and bend them to fit the angle on the bottoms of the cross beams; solder in place. Now drill and tap a 2-56 hole in the center of each cross beam for mounting trucks.

File the coupler pocket from $\frac{1}{8}$ " thick brass. Cut out the opening for the coupler shank by drilling holes and then filing out the waste metal. A strip of $\frac{1}{16}$ " sheet brass, beveled on the ends, is soldered onto the end beam first, as shown in the perspective drawing. The coupler pocket is then soldered in position. Small brass rings, roughly $\frac{3}{16}$ " diameter, are soldered to the end beams to represent poling sockets.

The two small hooks hanging from the channeled side of the underframe are for holding the rerailing frog. There are also two hooks on the other side of the frame, spaced about $1\frac{1}{2}$ " apart, which carry a chain having a loop on one end and a hook on the other. The hooks are bent to shape from $\frac{1}{32}$ " brass wire and soldered in position. Four $\frac{3}{32}$ " holes are drilled into the underframe for mounting the tender body to complete the underframe.

Motor brackets are cut from $\frac{1}{32}$ " thick sheet brass to the shape shown. Bend on the dotted line and fasten to the ends of the motor. In this model, a #3 K&D motor was used. Motor and brackets are set in place and the mounting holes marked off. Drill and tap the 2-56 holes and screw motor in place on underframe. Turn the motor shaft and check for clearance in

the cross beam and sides of underframe. If necessary, file more material away for proper clearance. File a flat on the motor shaft end to match the flat on the loco drive shaft end. Make up a bushing with a $\frac{3}{16}$ " hole as shown on the motor mounting drawing. This bushing is slipped on to couple motor shaft to drive shaft.

Tender trucks may be purchased at your local hobby store. Most any type freight or tender truck will do, for the prototype was equipped with many different type trucks. Mount the trucks to underframe with 2-56 screws. Make certain the motor shaft lines up with the drive shaft in the locomotive when the model is standing on the track. Either file material from the truck bolster or add washers between bolster and underframe to align the shafts.

The tender body is built up from $\frac{1}{32}$ " sheet brass. The half size template for sides and ends is shown in one piece. If you do not have one piece of sheet brass long enough however, it can be made in two pieces with the seam down the center of the back end of the body. The template is easily enlarged to full size with dividers; merely double all dimensions as shown. Cut out the sides and ends and bend the long tabs at bottom of sides for mounting body to underframe. When this is done, the remaining bends can be made. Make no sharp bends in the corners, but get them nicely rounded. Top of tender tank is cut to fit inside tender body and the end bent up to form the back of the coal compartment. Solder this in place about $\frac{1}{16}$ " below top edges of the sides. This is clearly shown in the perspective drawing. Cut out template for tender deck and bend up two ends on the dotted lines. These ends form the two inside surfaces of the tender body. Solder the deck in place and then cut out the piece forming front end of coal compartment; solder into position. Two pieces that support the tender deck are also cut from $\frac{1}{32}$ " sheet and soldered in place. (These are the pieces with the small angle shown in side view of tender.)

Place the body in position on underframe and mark off location of the four mounting holes. Drill and tap 2-56 into tabs under tender body. Except for details, the body is complete.

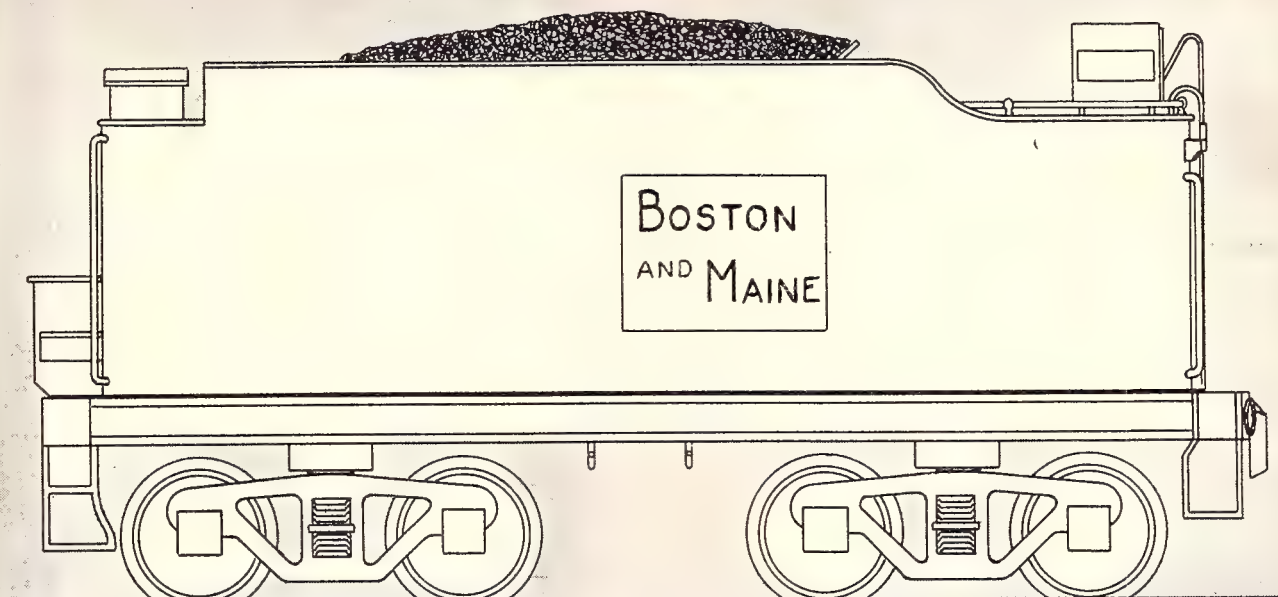
Use low handrail posts to mount the handrail on tender tank. Solder posts securely in place inside tender body. The headlight is identical with the locomotive light and is mounted on a simple support as shown.

The manhole cover is filed from brass and the cover hinged so that it can be opened for throwing the reverse switch. Cut a slot through top of tender tank before soldering the manhole cover in place. The arm of the reverse switch will protrude through this slot. File a small tool box from a brass block and solder in proper position at tender front. There are also two $\frac{1}{16}$ " wide strips of $\frac{1}{8}$ " thick sheet brass soldered in the front compartment of the tender to hold the pokers and shovel. This model is equipped with two pokers, a shovel and small pickaxe to break up large lumps of coal.

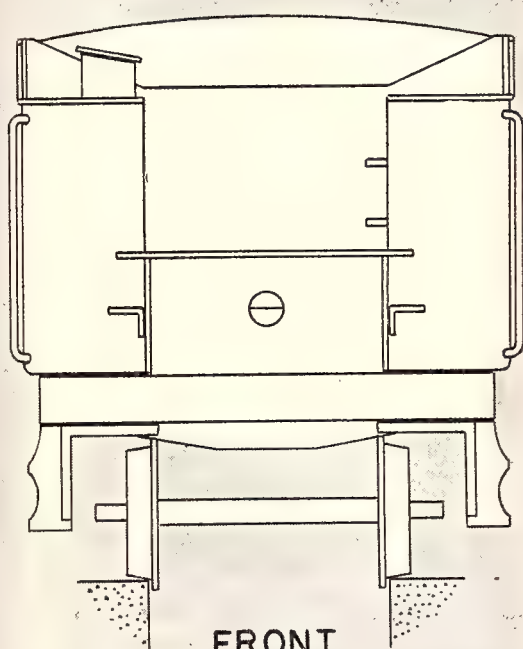
Dummy coal is not represented with gravel in this model due to the low sided tender. The field of the motor is high and

(Continued on page 42)

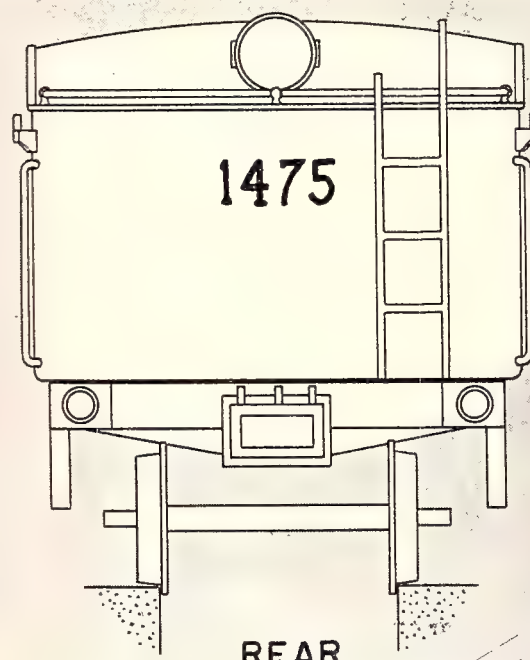
BOSTON AND MAINE MOGUL TENDER DRAWING



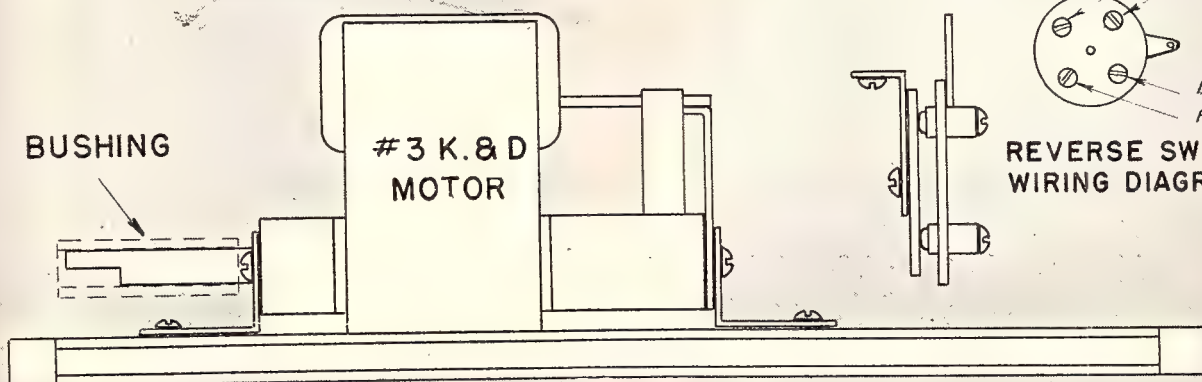
SIDE VIEW



FRONT



REAR

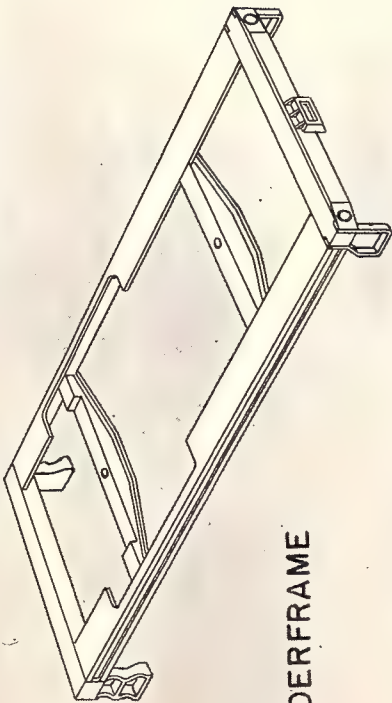


MOTOR MOUNTING

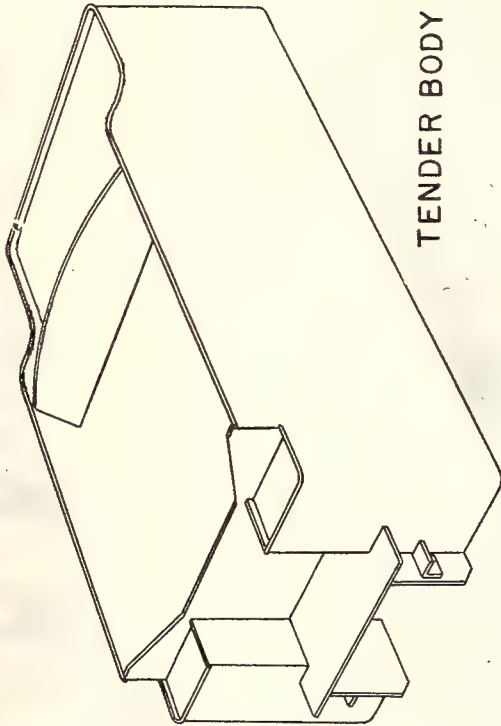
L. AUSTIN

BOSTON AND MAINE MOGUL

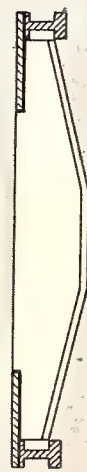
TENDER DETAILS



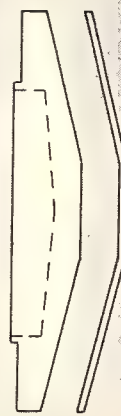
UNDERFRAME



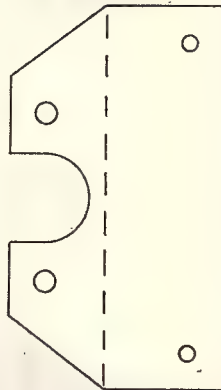
TENDER BODY



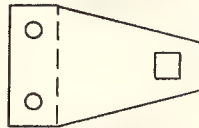
CROSS-SECTION OF FRAME



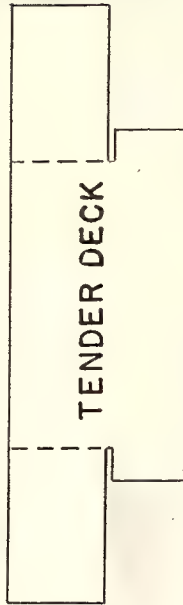
BOLSTER



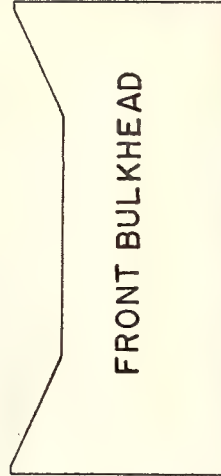
MOTOR SUPPORT



REVERSE
SWITCH
SUPPORT



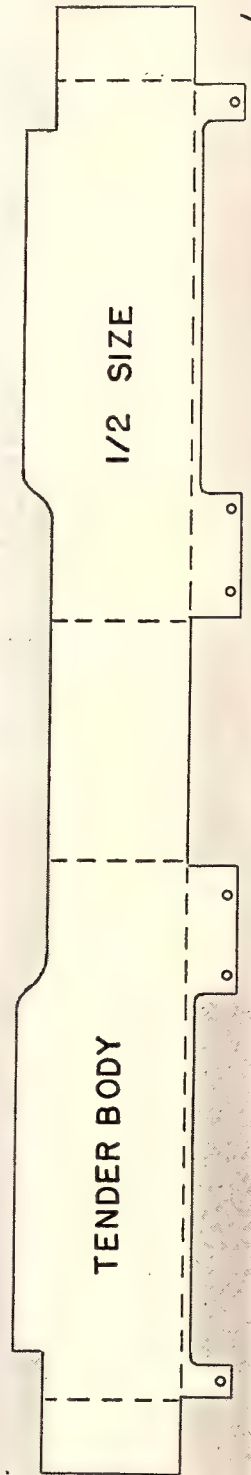
TENDER DECK



FRONT BULKHEAD



MANHOLE COVER



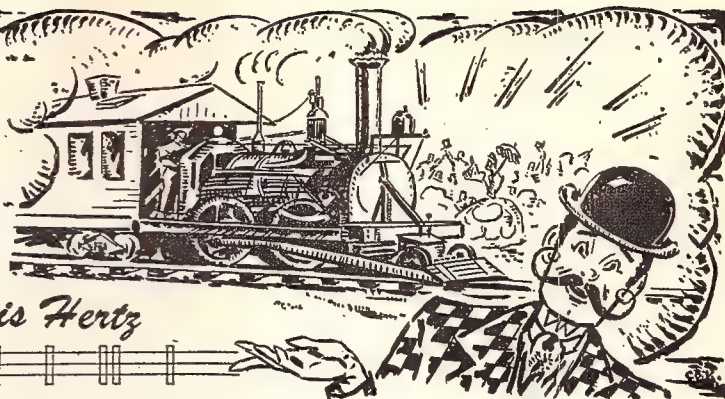
TENDER BODY

1/2 SIZE

L. AUSTIN

More about IRON TRAINS

along the tinplate track with *Louis Hertz*



IT IS very clear now that considerable interest exists in the old cast iron trackless locomotives and trains. This is indicated by the amount of comment received whenever an article is published on the subject. Our notes appearing in the March issue on "Identifying Iron Trains" caused an unusual number of immediate comments. Several readers felt we were still being too conservative in our statements as to positive identifications.

We may well be guilty of this, to some extent, at least. We feel it better however, to err on the conservative side as far as definite statements and identifications go. We well remember how, perhaps only a decade ago, any trackless cast iron locomotive was automatically recorded as an "Ives." Today we know what type of iron locomotives Ives did make, plus a great deal more of the company and its background than was ever thought would be uncovered. It is now clearly seen that many of the pieces once labeled "Ives" by wishful hearts, would hardly have been worthy of a place on the scrap pile at the Ives factory, so inferior in design and quality are they to the actual productions of that plant.

Now we are aware of the number of companies who made iron trains, of the enormous multiplicity of designs yet frequent close similarity between models of two or more independent companies. And yet, except for the very earliest models, practically none bear patent dates or other identifying marks. As a result, we will endeavor to make positive identifications only when we are really certain, and even then we will probably make more than our share of mistakes.

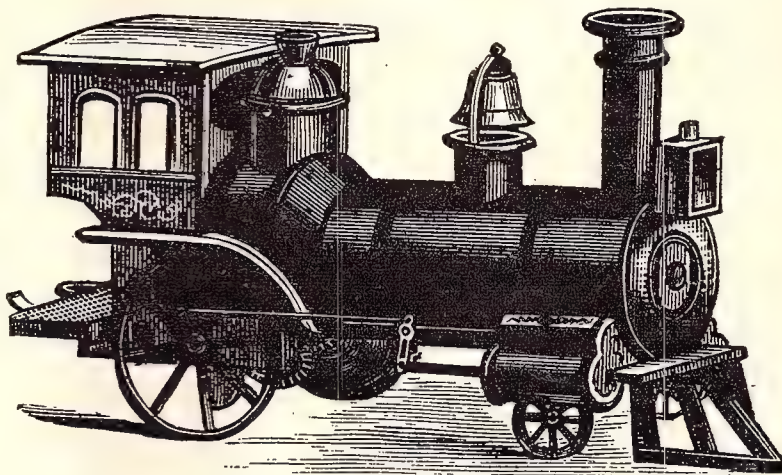
Many of the letters regarding the March article pointed out that while we covered the physical design of the trains themselves, we failed to say very much about the histories of the iron train manufacturers in question. They further stated that in the past we have covered the his-

tory of the most important manufacturers, but have not touched, even briefly, upon most of the later less important or smaller iron train makers. Some of them have appeared in name only, without even the locations of their factories or the periods in which they made trains being recorded. This is a valid point, and we shall endeavor to rectify this deficiency at this time.

As a matter of fact, we can start by adding to the list of iron train manufacturers an entirely new firm, unknown to us at the time we wrote the March article

The largest train listed, including locomotive, tender and three cars, was forty inches long and wholesaled for \$9.00 a dozen. No really distinctive clues regarding positive identification can be noted, however a small 2-2-0 locomotive with four wheel tender attached is lettered "N. Y. C. R. R.," which may or may not be a definite clue to an exclusively Dent products.

Of course, there may be other iron train manufacturers whose names are still unknown to us. One or two firms are known to have made iron toys, but as



A Secor 2-2-0 trackless clockwork iron locomotive of the 1880's, following closely the general design of contemporary Ives tin locomotives. It was, in turn, the basis of departure for the design of early Ives cast iron locomotives.

—Dent Brothers, of Fullerton, Pa. They flourished about thirty years ago. A 1916 catalog offers some of their productions, which were, "the very best of their kind on the market," according to caption.

A study of the illustrations and descriptions indicate these designs were rather typical, and mostly medium size models.

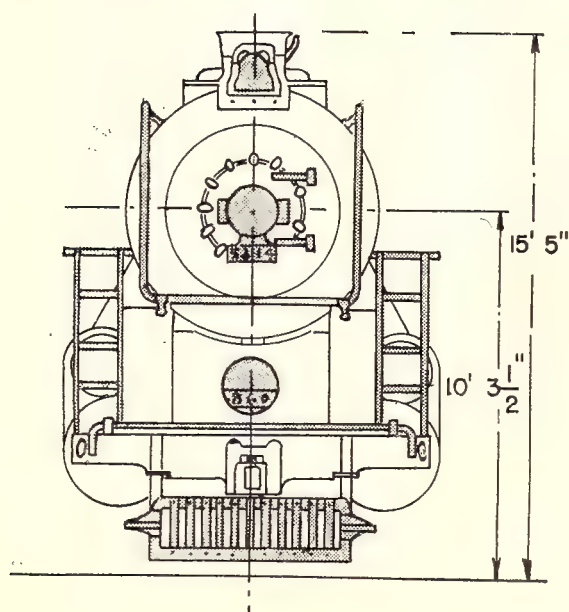
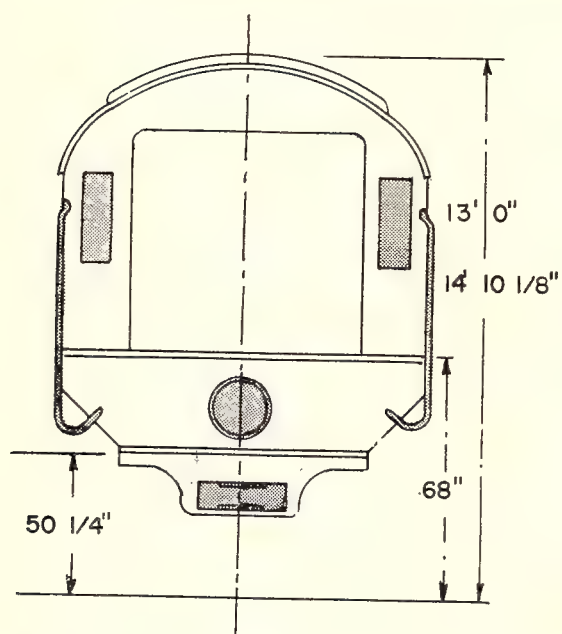
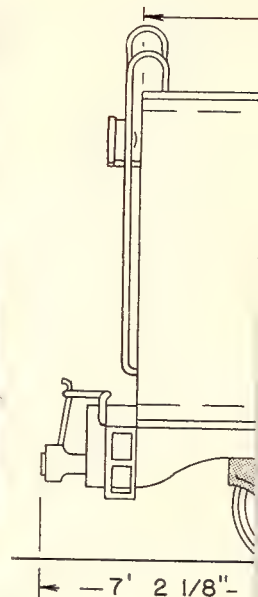
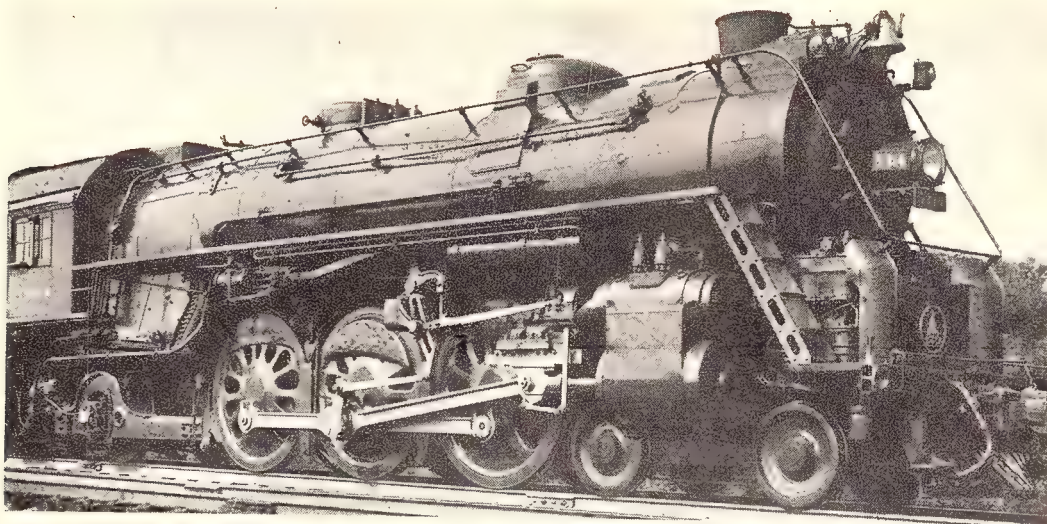
seems likely, it has not yet been ascertained if these toys included iron trains. Generally speaking however, it seems logical that any manufacturer who attempted to offer a line of iron toys of any consequence would have included at least a few trains. Such knowledge, how-

(Continued on page 45)

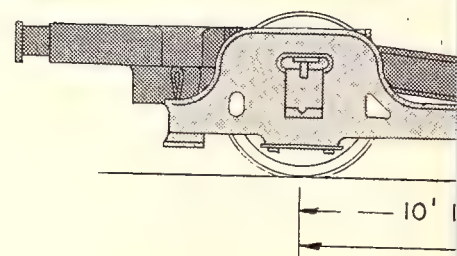
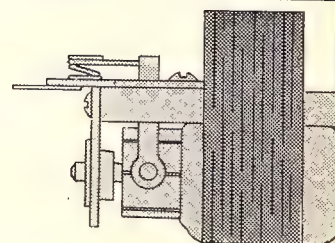
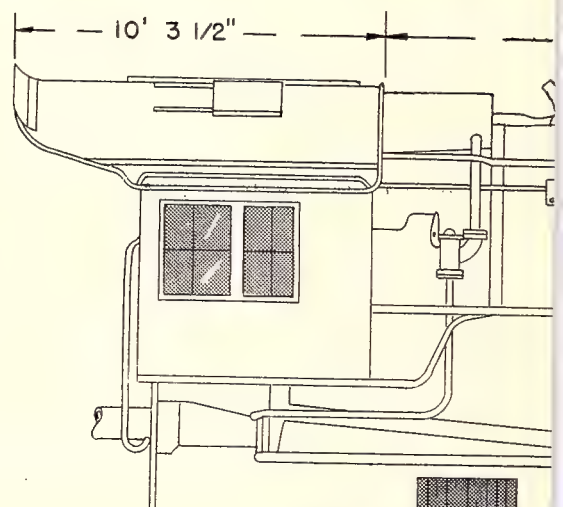
This Hubley cast iron passenger train of approximately forty years ago includes their rather accurate model of an old Pennsylvania R. R. 4-4-0 locomotive. Unfortunately, the old catalog cut reproduced here fails to do justice to details of the locomotive, which include a Bellpaire firebox.

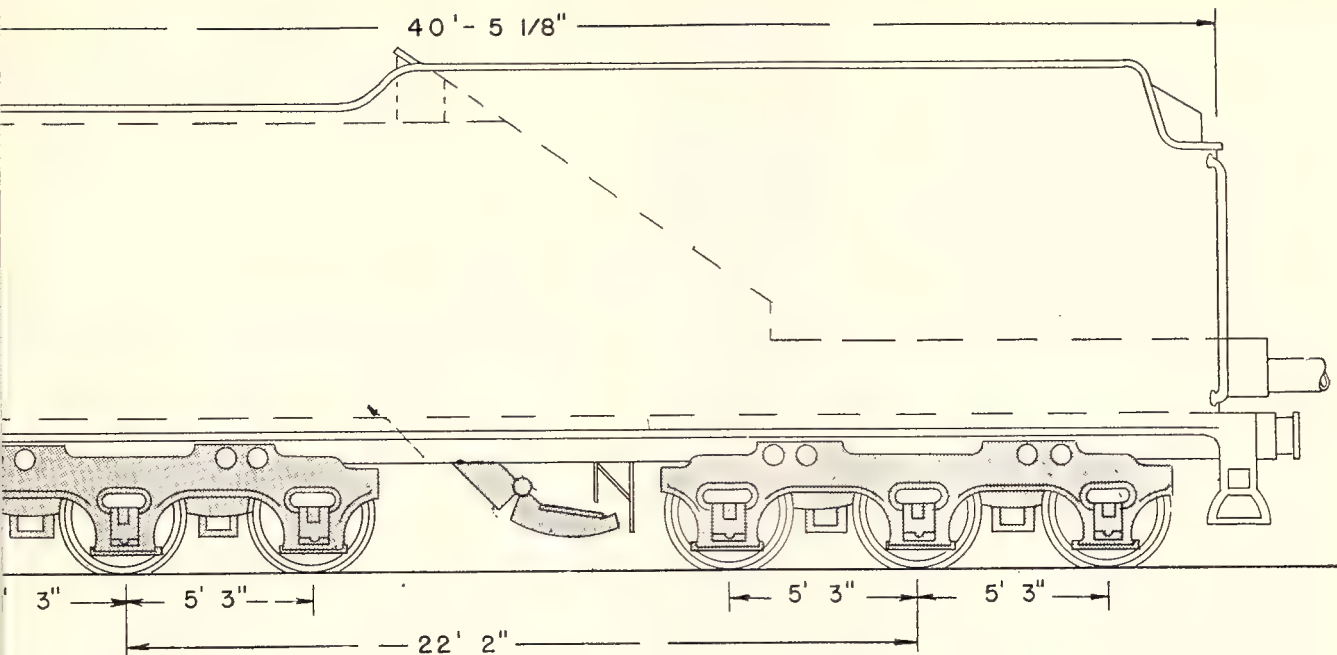


Large Passenger Trains.

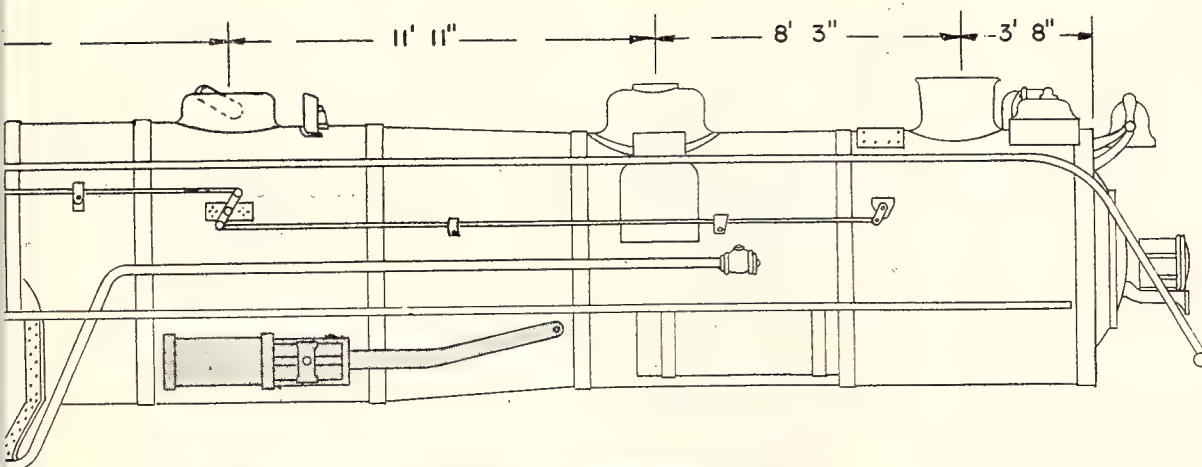
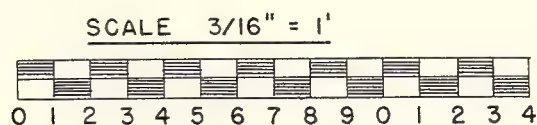


B&O PAC

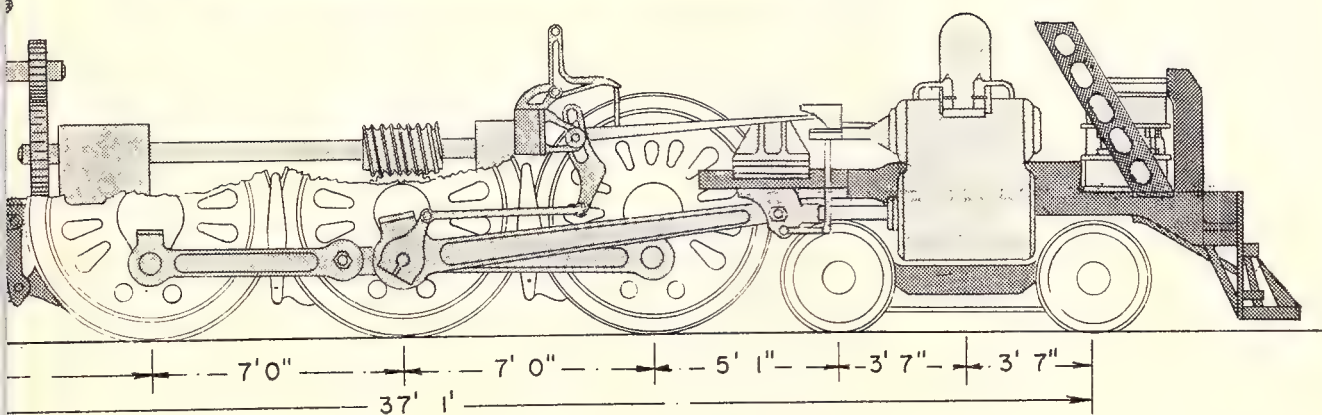


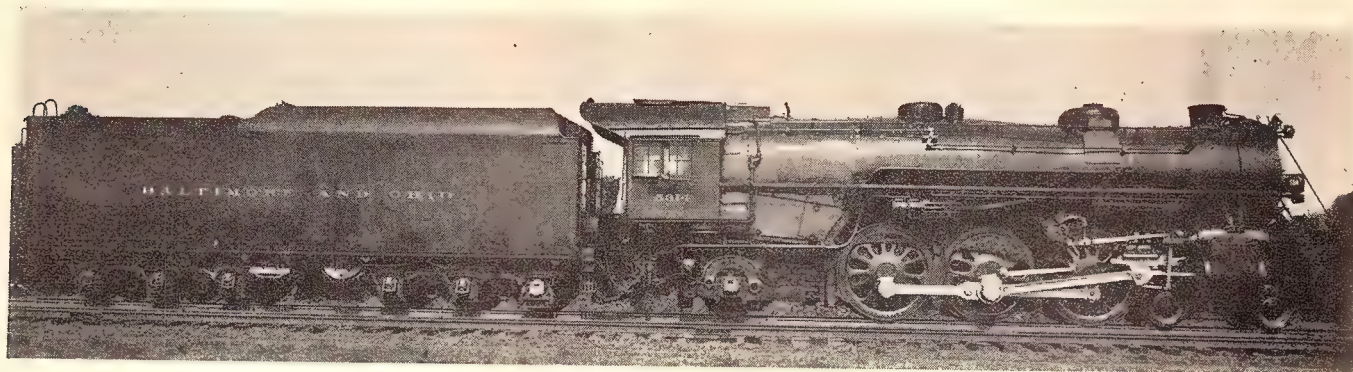


IC 4-6-2

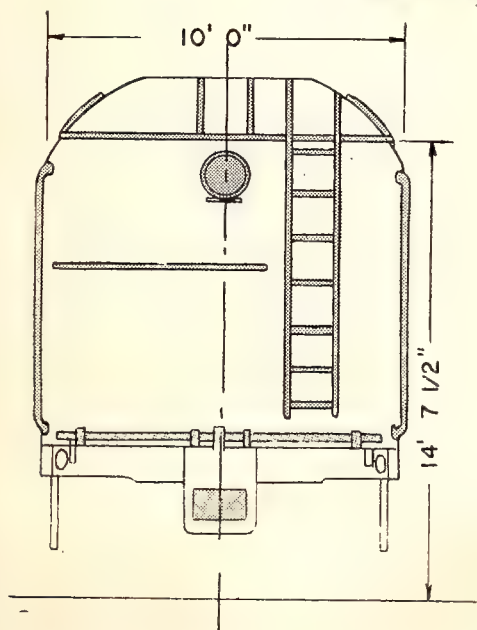


EXPLODED FOR CLARITY



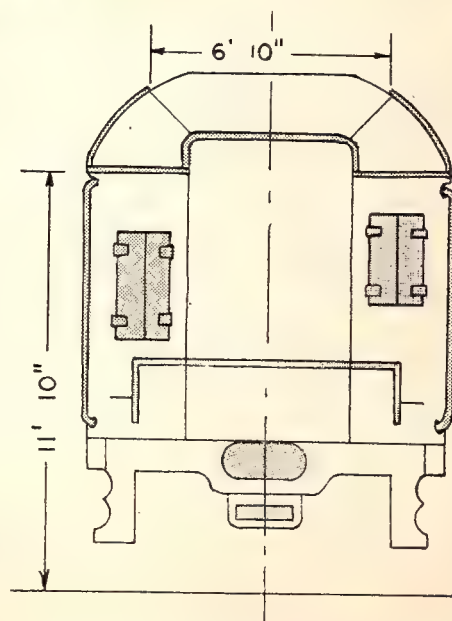


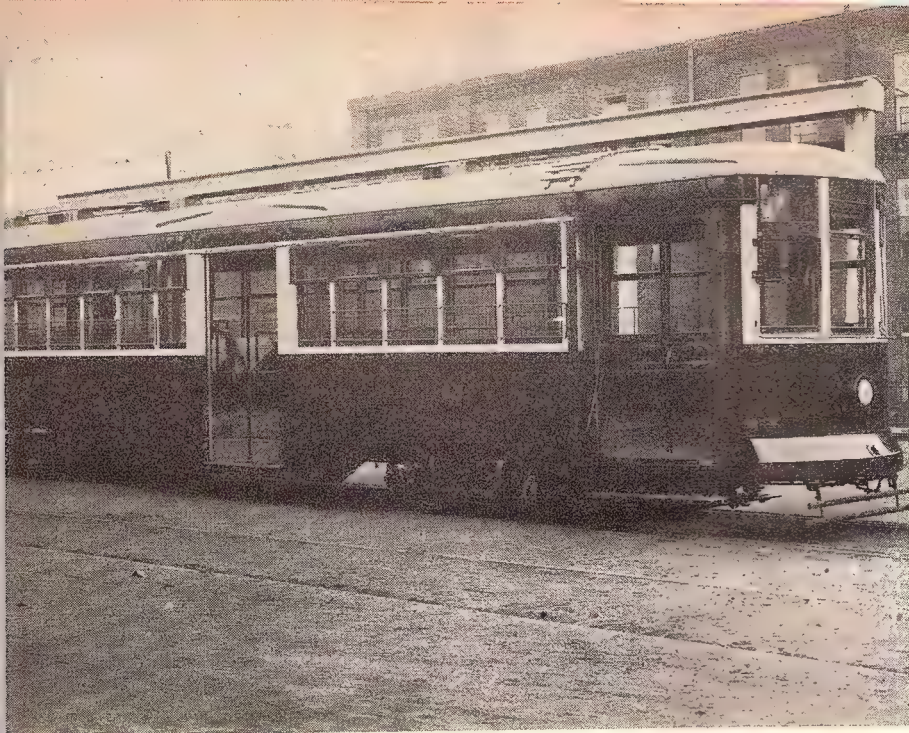
B & O Pacific



SCALE 3/16" = 1'

CYLINDERS	27" X 28"
DRIVER-DIAM.	80"
STEAM PRESSURE	230 LBS.
TRACTION EFFORT	50,000 LBS.
WT. OF ENGINE	333,500 LBS.
TENDER-WTR. CAP.	20,000 GAL.
TENDER-COAL CAP.	25 TONS
TENDER WEIGHT	365,000 LBS.





Large City Car

By WILLIAM SCHOPP

"FOR heavy traffic, the bus can never replace the trolley". This statement is no better illustrated than in Philadelphia where hundreds of big center exit cars are still in use. Furthermore, they promise to be in use for many years to come, since the hundred or more P.T.C. cars ordered as well as new buses and trolley-buses are scheduled to replace older type cars which are similar to the one illustrated in general tone, but are made of wood.

Your first problem will be to obtain the power truck for this model, either commercial units or built-up. The trucks should be motorized for any but a mantle-

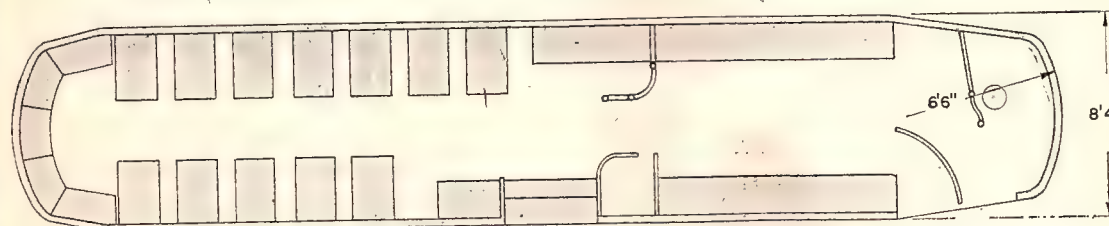
piece model. How you motorize your truck will depend on available material, and for suggestions refer you to my article in June, 1944, MC. Once you have your motor truck, arrange to mount it to the car floor.. My suggestion is to fit it to the floor and even operate the car on your tracks under a jury pole to make certain the mounting and truck are OK. Now cut a roof to match the floor, using a razor blade, rasp and sandpaper to curve the roof ends.

Your biggest problem of course is the sides and ends, and these should match the dimensions of both the floor and roof. For the sides, we recommend the old

method of two layers of cardboard. The main layer for this car would take care of the lower portion of the sides together with window sash openings, i.e., the glass. Over this, lay window posts and belt rail layer which includes letterboard. Over upper portion of this, below the letterboard, is laid the upper sash layer. You may want an inner layer to reinforce the lower portion of the side. If you intend to finish the interior of the car however, make this exactly identical with the main layer and sandwich the celluloid windows in between the two. Curved ends are similarly made, but must be pre-curved before windows are cut out and pricked for grabirons, etc. Fit the ends with their slanted approaches to the car after the sides have been put in place.

When the floor, roof, sides and ends have been assembled, you have the shape of the car, but details are what makes the car complete. On the roof are ventilators (see photo), roof walk, pole and lead wire. Underneath we have the various air tanks, compressor, resistors, fuse boxes, draw bar, etc. There are grabirons, head and tail lights, retriever and tray under the platform, etc. Window grills are made from window screening around which has been soldered frames of heavier wire. After the frames are soldered to the screen, the pieces may be cut out. Rivet detail can be added (taken from photo) by overlaying the sides with rivet strips and even plates. These are made from typing paper into which the rivets have been embossed with the period key of the typewriter. Throw the ribbon to "white" or no ribbon at all (used for cutting stencils) and bear down hard. A few extra sheets under your "rivet sheet" will provide a cushion that will permit the rivets to sink in well.

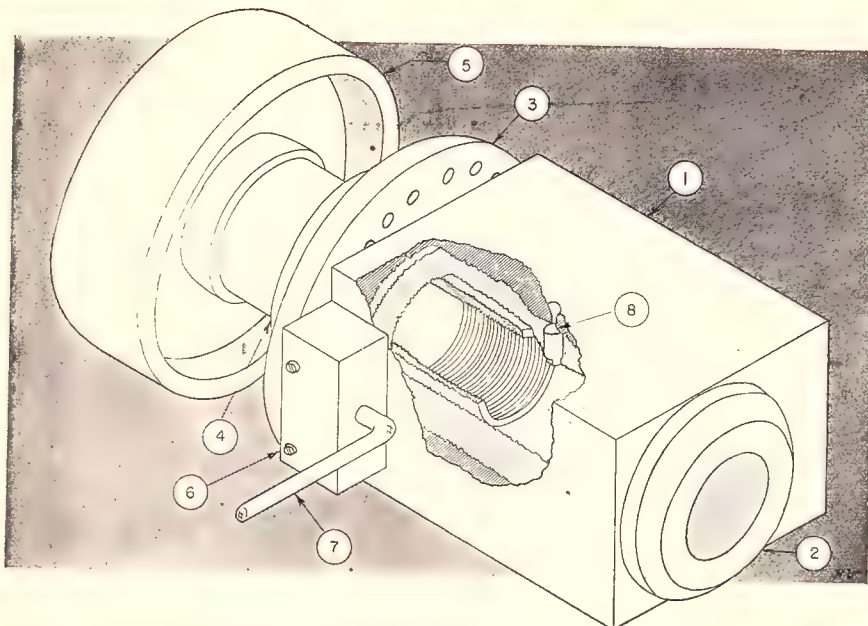
These big cars are cream and dark green with gray roof. Window frames are tuscan red. The plans are presented through the courtesy of Carl G. Daley, while the detail has been obtained through the courtesy of the writer's legs, dashing out front to watch the cars go by!



PHILADELPHIA
TRANSPORTATION
COMPANY

SCALE 1/8" = 1'





not be able to turn the 12° taper. This taper should finish approximately $2\frac{3}{32}$ " dia. at the end. Check this with your collets. They should extend slightly over edge so that when drawn up, they will be about flush. Drill and ream a $\frac{3}{16}$ " hole $1\frac{25}{32}$ " from nose and your spindle is complete. (Note—The shoulder for index plate can be fitted after plate has been put on. The spindle should turn easy without any end play.)

INDEX PLATE (3)—This is a simple turning job except for the holes. Put the finished plate on an arbor which fits the lathe with an index pulley. Mount the center drill in a toolpost grinder and spot 24 holes fairly deep. Remove and drill and ream $\frac{1}{8}$ " in your drill press. If this equipment is not available, make a heavy scribe mark with a 45° sharp tool while the plate is still in the lathe after the facing and boring. Make this

(Continued on page 42)

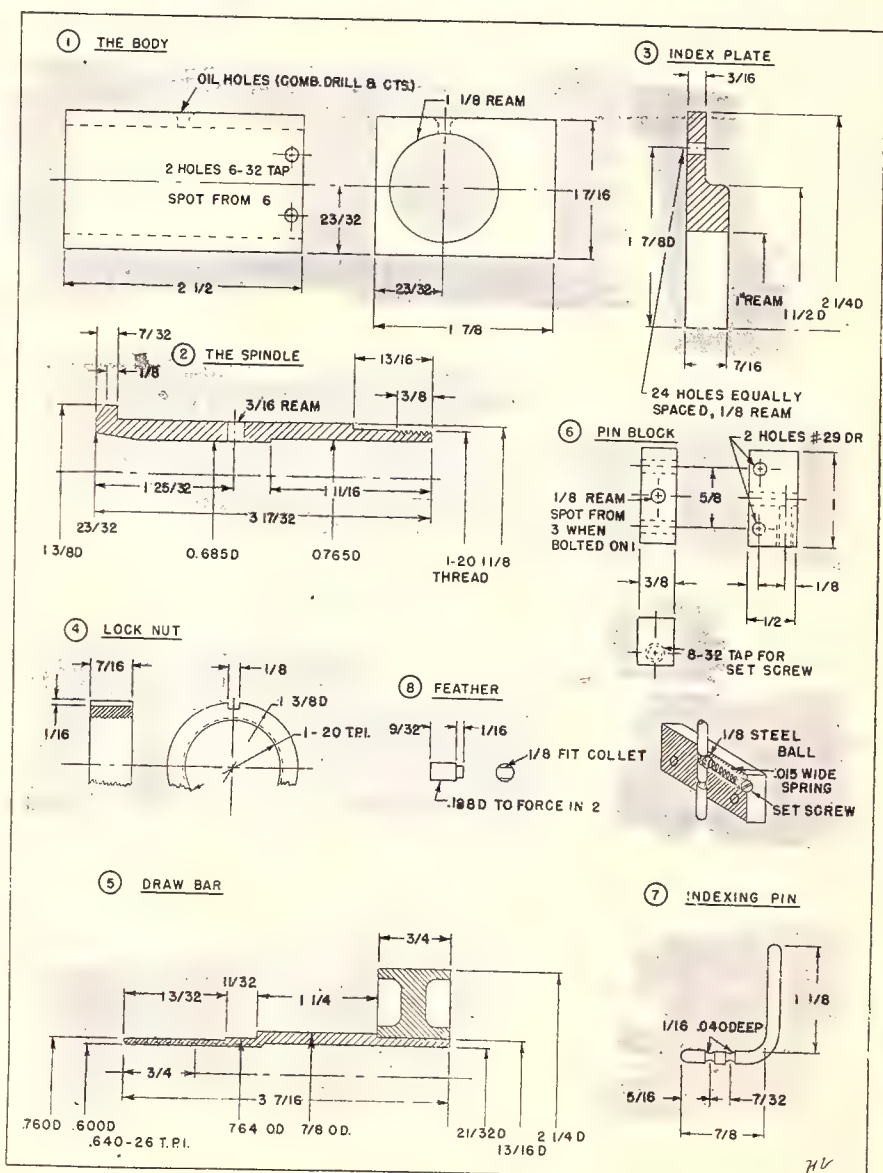
Small Indexing Attachment

Here's a handy gadget for your lathe, useful and accurate when milling hex nuts, cylinder covers and various other jobs!

BODY (1)—Take a piece of $1\frac{1}{2}$ " x 2" C.R.S. and cut $2\frac{3}{8}$ " long. Square this in the four-jaw chuck to $2\frac{1}{2}$ " long, $1\frac{1}{8}$ " x $1\frac{1}{16}$ ". Set in four-jaw chuck with center mark for the bore running true; drill out with 1" drill and finish bore a couple "thousandths" under $1\frac{1}{8}$ ". Ream $1\frac{1}{8}$ " or finish with light boring cut, first making certain the lathe cuts straight. Take a light cut across the outside face to true this with the bore. Reverse in chuck and lightly face opposite end. Use center reamer to put oil hole through top as indicated.

SPINDLE (2)—Made from C.R.S. $1\frac{3}{8}$ " D. x 4", extra stock to be used for chucking in 3-jaw. Face and turn outside to a nice fit in block about $3\frac{7}{16}$ " to shoulder. Turn down to 1" dia. for thread size slightly less than $1\frac{3}{16}$ ". Screw cut a 1"-20 thread on the end for $\frac{3}{8}$ ". Center and drill $\frac{1}{2}$ " directly through stock and open up with boring to .685 I.D. entirely through. All sizes are given for #3 S.B. collets, so if different make collets are used, alter the bore accordingly. Relieve end of bore to .765 D., $1\frac{1}{16}$ " deep. Take care not to spring the work in all operations and you will have a good concentric job. Now reverse in 3-jaw and face shoulder to $\frac{7}{32}$ " thick, putting a 45° bevel on the end.

This next job requires care to get the spindle to run true. If you have an indicator, place work in 4-jaw and set running true by indicating $1\frac{1}{4}$ " bearing diameter. If no indicator is available, turn up a mandrel to fit snug on the inside bore of .685 D. Do not let the mandrel go through the spindle too far as you will



flywheel boiler FEED-PUMP

THE original pump of the type illustrated has been successfully built and operated by the author. It has run much smoother than anticipated, and being single-acting (both steam and water units) proved to be the acme of simplicity. This type pump has no packing glands, requiring very little attention. Friction has been reduced to a minimum, a factor to be reckoned with in such small working models.

The steam exerts pressure on the piston at the same time the pump is forcing water into the boiler. On the return stroke, the light spring concealed under the base, exerting action on the wristpin through the rocker arm and connecting link, draws the piston back (fig. 1). No work being performed here other than friction and filling the pump cylinder with water, only a light tension is required. Simply stretch the spring until the pump rolls over smoothly. Stainless steel balls were used for the water valves, permitting the size of the valve boxes to be reduced. How-

A simple design feed pump, operating without glands, or packing, thus reducing friction. Feed water heater is included.

By C. BLACKSTAFFE

ever, as most builders cannot obtain these, I have shown winged valves. These will work well, grinding them in with bon ami and water, mixed to a paste.

The feedwater heater is optional and will add a touch of realism to the miniature engine room, beside condensing the exhaust of the feed pump and converting wasted heat into warm feedwater.

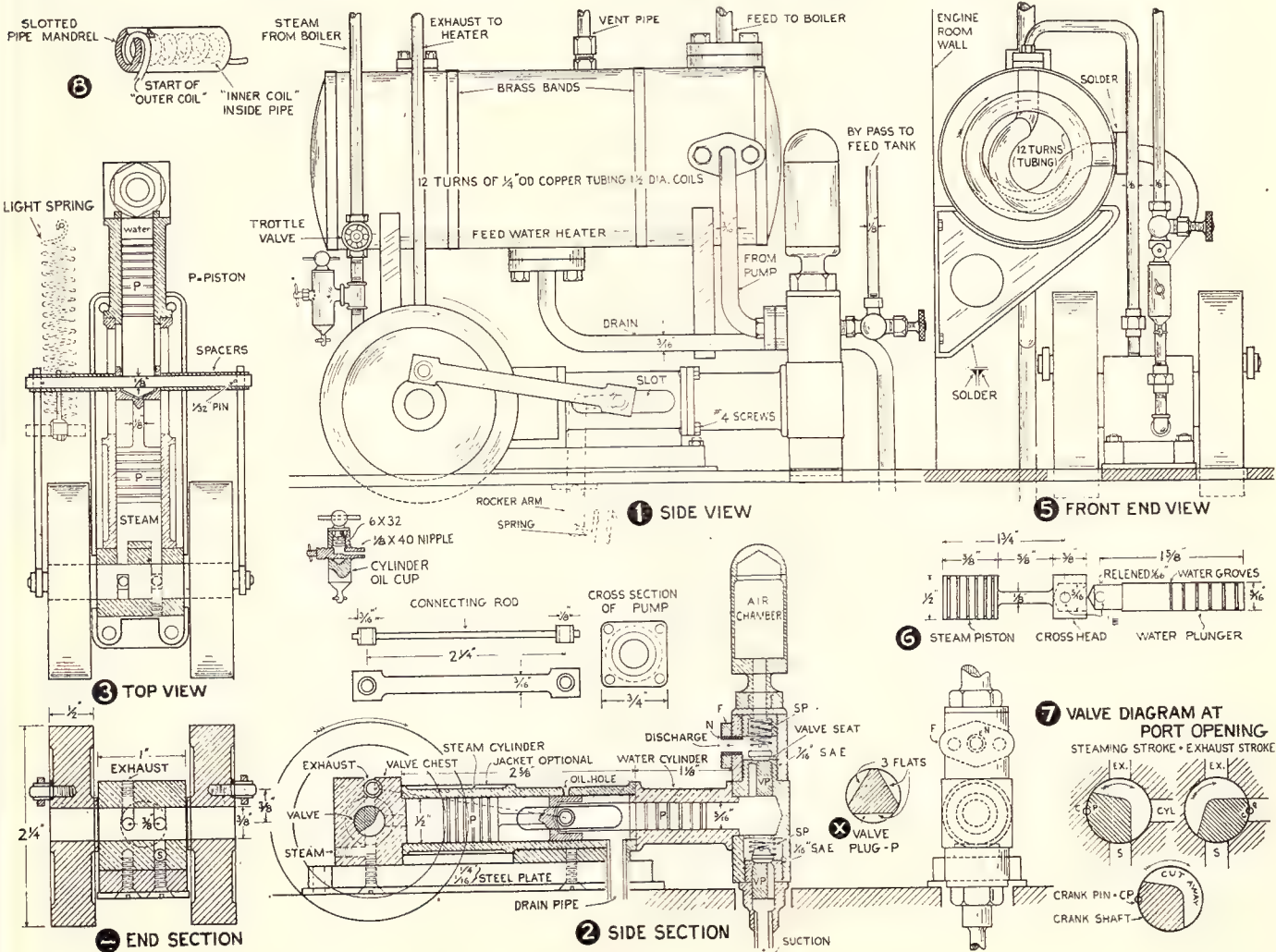
First obtain a piece of cast brass 9" long and 1" sq. Chuck the piece true, face off, centre and drill $3\frac{1}{4}$ " for $2\frac{3}{4}$ " depth and ream $\frac{1}{2}$ " for the cylinder bore. Turn the outside to $1\frac{1}{16}$ ", leaving a square

flange $\frac{3}{32}$ " thick at either end where it joins the valve chest and pump cylinder, plus a ring in the center which divides the cylinder from the guide section (fig. 2). If you do not care to use a jacket sheet around the steam cylinder, leave a $\frac{1}{16}$ " diameter here. Part off a $2\frac{5}{8}$ " overall, and run the reamer through.

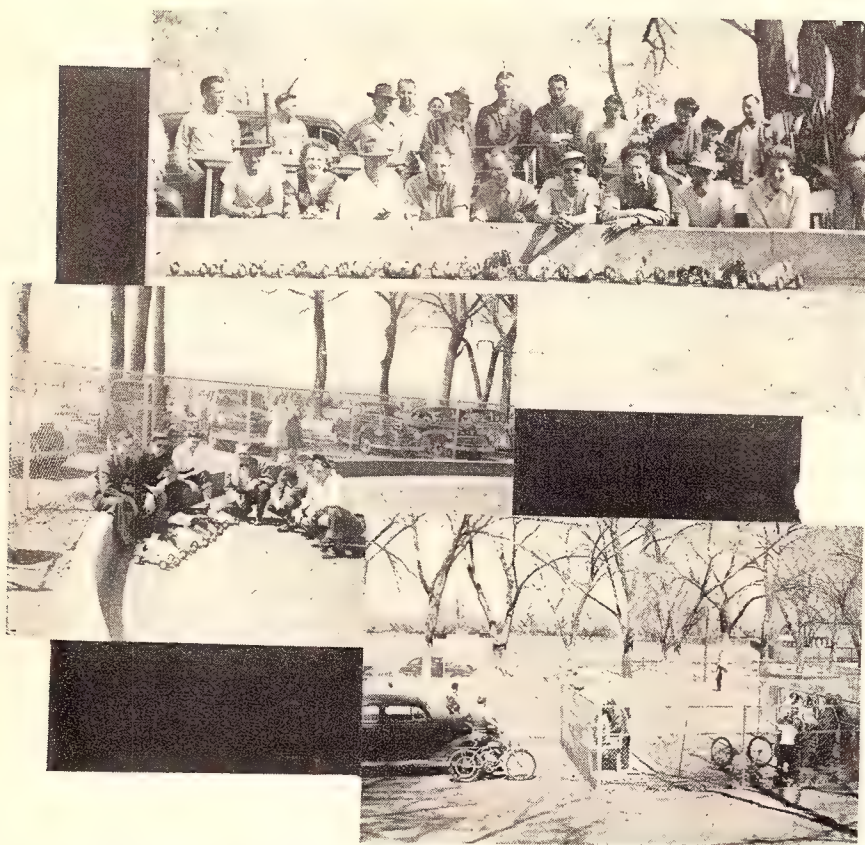
WATER CYLINDER. From the same stock, center, drill $1\frac{1}{4}$ " and ream $\frac{3}{16}$ " for $1\frac{1}{2}$ " depth. Turn a shoulder $\frac{1}{16}$ " long to make a tight fit in the cylinder just made. Leave a square flange (as on the guide) and turn down to $\frac{3}{16}$ " for the barrel of the cylinder. The flange, as it joins the valve box, can be round or square, as this is to be soldered. When parting off, leave $1\frac{3}{8}$ " over the flanges and turn a $\frac{3}{16}$ " shoulder $\frac{1}{16}$ " long on the end to enter the valve box.

The valve box is also made from the same stock. Turn the end down to $\frac{7}{16}$ " diameter for a length of $\frac{1}{2}$ ", and screwcut a $\frac{7}{16}$ " S.A.E. thread on it. Center, drill $\frac{15}{64}$ " for $\frac{3}{4}$ " depth and ream to $\frac{1}{4}$ " diameter. With a round-nosed tool, take a light cut off the face, feeding out to prevent any burr forming in the hole. Set the tool to 45° and touch to remove the wire edge, taking no more since we require less than $\frac{7}{64}$ " seat width to start. Leaving $\frac{3}{4}$ " of a square section, turn the last $\frac{3}{8}$ " round length $\frac{3}{4}$ " diameter, and part off. Reverse in chuck, center and drill for $\frac{1}{2}$ " depth, tapping $\frac{7}{16}$ " S.A.E.

(Continued on page 50)



MINIATURE RACING CARS



Newly completed cable track at Pueblo, Colorado, located at City Park. The boys hold their first race on June 22nd, the first races to be held in Pueblo! Top photo shows a combined group from Denver and Pueblo.

will do some fancy running, and Chicago will have some stiff competition from them.

If any further information is required about club affairs, write to club secretary, Frank J. Pawlikowski, 2305 N. Maplewood, Chicago 47, Ill., or call Arm. 5302.

RAIL RACE FEATURED AT HOBBY-MODEL SHOW

A RAIL track race car meet will be a spectacular feature of the first Annual National Oakland Boys' Club Model and Hobby Show to be staged in Oakland, California, from June 4th to 8th.

Racing will be run on a four-rail track, laid in the form of an 80' circle and banked for maximum speed. Prototype cars will be entered in competition for the highest speed. Prizes will include a perpetual trophy and five place trophies, plus consolation prizes. The meet will be witnessed by the fans of model builders of the San Francisco Bay area with an estimated 100,000 persons in attendance. Entries are being accepted at the Oakland Boys' Club hobby headquarters, 59 Grand Ave., Oakland 12, Calif.

This is the first time this event has been presented in Northern California and is a very concerted effort on the part of the directors of the Boys' Club to promote this type of racing for the enthusiasts in this area. Great speeds are not necessarily expected, due to the complex problem of adapting the cable track cars to rail racing. Detail drawings of adapting cable cars to rail racing will be furnished to all entries.

It is a foregone conclusion that this type of racing has greater spectator appeal. Fans will be developed in a gallery which will outnumber the contestants 50 to 1. Oakland is and has always been a big racing town—witness the success of the man-carrying midgets and the big cars.

Those entering the race will be furnished full particulars and be kept ad-

CHICAGO BIDS FOR RAIL NATIONALS

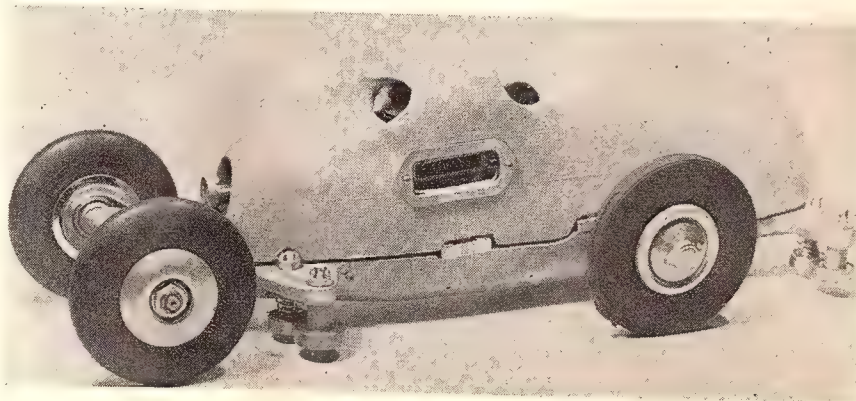
By FRANK PAWLIKOWSKI

CHICAGO has put in its bid for holding the coming 1947 Rail Nationals. And judging from the way things are shaping up, it looks like the *Windy City* is certain to end up with those Nationals! Jimmy Thompson has just returned from the West Coast where he talked with Ray Snow who informed him there is still much to be done on the Fresno track. It is also questionable whether it will be completed in time for the Nationals. Milwaukee is still looking for a site for their new track. So after covering the general picture, we feel Chicago has a good chance for the big event of the year.

The opening of the Chicago track was postponed until the 18th of May. Old man weather was the fella to blame. Chicago had a record rainfall for the month of April and for the first four days in May rainfall records fell that has stood their ground for some twenty odd years. Chicago's new timer fell victim to the terrific rainfall. Mr. Lipski's basement was flooded with some 20 inches of water, which did some minor damage to the automatic timer, delaying the permanent in-

stallation for at least a month or two.

Elmer Wheller of South Bend, Ind., ran Dick McCoy's car from the West Coast and did a neat 72 MPH on a cold and windy day with the temperature dropping around 40°. Judging from the looks of Dick's car, the West Coast boys



The first car in rail jeeps, the "Riffs Special," built and owned by Frank Pawlikowski, of the Chicago Club. Car weighs 5 lbs., 4 oz.

vised on all developments as the race date approaches. Those interested in racing their car by proxy should enter and details will be furnished as soon as available. Race committee will be appointed by the race director from the contestants. The one and only objective of this first rail track race is to give all the fans a chance to get acquainted with rail track racing and to develop the hobby in this vicinity. The reaction so far has been very gratifying and the success of the race is assured. The meet is expected to capture for the East Bay all the fun that has been experienced by rail track fans all over the nation.

Special features will be scheduled so those manufacturers having experience in rail racing will be able to show contestants what can be done and how to do it. Every effort will be made by the management to provide a most enjoyable time for the contestants and spectators. This type of racing is to be included in the Boys' Club Model and Hobby Show for the next five years. The perpetual trophy will be awarded permanently at the close of the fifth show to the man who wins it the greatest number of times.



Bill Thomas, Jr., of Daytona Beach, Fla., accepts beautiful trophy from Fran Brennan (right), of Monroe, La. The Monroe Club donated this trophy for the first man breaking the existing record in either Spur or Proto, starting with their own New Year's Day Classic. Thomas went to town with a neat 120.32 MPH in Spur at the Eustis Meet on Feb. 22nd.

ORMOND INVITATION MEET

AN Invitation Meet was held at the Ormond Raceway, Daytona Beach, Fla., on April 27th with a field of local cars and visitors from Jacksonville and Eustis, Fla. The Ormond Raceway is a 1/2nd mile banked course with grass infield, and is the pioneer model track in the state of Florida. Three heats were held in both Streamlined Spur Gear and Conventional type cars.

SPUR GEAR

	Car—Engine	MPH
P. Smith, Jacksonville (McCoy-Hornet)		95.74
Alex Farley, Ormond (Farley-McCoy)		93.78
W. A. Baker, Eustis (McCoy-Hornet)		92.78
E. Clayton, Ormond (Clayton-Hornet)		90.00
C. Faraldo, Ormond (McCoy-Hornet)		85.71
H. Allen, Ormond (McCoy-Hornet)		84.91

CONVENTIONAL

A. Butts, Eustis (Invader-Hornet)	*86.54
P. Smith, Jacksonville (Invader-Hornet)	86.54
W. Baker, Eustis (Invader-Hornet)	84.11
D. Farley, Ormond (Invader-McCoy)	81.82
B. Thomas, Ormond (Invader-McCoy)	78.26

* Won match race to break tie.

SAN DIEGO INVITATIONAL MEET

AN Invitational Meet was held at the Pacific Beach Track in San Diego, Calif., March 22nd and 23rd. Contestants were registered from as far north as San Francisco and as far east as Phoenix. A total of 93 entries competed in this meet, 47 entries for the manufactured proto division, 21 spur, 13 special proto and 16 hot rods.

On the first day of the meet, John Gilcrest and Harris Dooling set a new record for the Manufactured Protos. This speed was not bettered on the second day of the meet, and Dooling conceded first place to Gilcrest. Both engines were checked and

found to be stock and well within the limits. Both contestants used the new Dooling race car engine mounted in the Dooling proto. Each contestant was given two runs and the San Diego Club is to be congratulated for the efficient manner in which the race meet was run. All visitors complimented the local gang to this effect.

MFG. PROTO

	MPH
1st.—John Gilcrest	107.39
2nd.—Harris Dooling	107.39
3rd.—Dick McCoy	104.16

PROTO (Special)

1st.—Art Poore	107.78
2nd.—W. White	107.27
3rd.—A. W. Smith	102.85

SPUR GEAR

1st.—Dick McCoy	115.83
2nd.—C. B. Lamb	113.35
3rd.—W. White	107.65

HOT ROD

1st.—Dean Fisher	91.27
2nd.—T. Hill	89.73
3rd.—Junky Anderson	87.20

SECONDS TO M.P.H. FOR 1/4 MILE

Sec- onds	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
7.50	120.00	119.84	119.68	119.54	119.37	119.20	119.05	118.88	118.73	118.58
7.60	118.42	118.27	118.11	117.95	117.80	117.65	117.49	117.34	117.19	117.04
7.70	116.87	116.72	116.57	116.42	116.27	116.12	115.97	115.83	115.68	115.53
7.80	115.38	115.24	115.09	114.97	114.79	114.64	114.50	114.35	114.21	114.06
7.90	113.92	113.78	113.63	113.49	113.35	113.20	113.06	112.92	112.78	112.64
8.00	112.50	112.35	112.21	112.07	111.94	111.80	111.66	111.52	111.38	111.24
8.10	111.11	110.97	110.83	110.70	110.56	110.42	110.29	110.15	110.02	109.89
8.20	109.75	109.62	109.48	109.35	109.22	109.09	108.95	108.82	108.69	108.56
8.30	108.43	108.30	108.17	108.04	107.91	107.78	107.65	107.52	107.39	107.27
8.40	107.14	107.01	106.88	106.76	106.63	106.50	106.38	106.25	105.13	106.00
8.50	105.88	105.75	105.63	105.50	105.38	105.26	105.14	105.01	104.98	104.77
8.60	104.65	104.52	104.40	104.28	104.16	104.04	103.92	103.80	103.68	103.56
8.70	103.44	103.32	103.21	103.09	102.97	102.85	102.73	102.62	102.50	102.38
8.80	102.27	102.15	102.04	101.92	101.80	101.69	101.58	101.46	101.35	101.23
8.90	101.12	101.01	100.89	100.78	100.67	100.55	100.44	100.33	100.22	100.11
9.00	100.00	99.89	99.78	99.67	99.56	99.45	99.34	99.23	99.12	99.01
9.10	98.90	98.79	98.68	98.58	98.47	98.36	98.25	98.14	98.04	97.93
9.20	97.87	97.73	97.61	97.51	97.40	97.30	97.19	97.09	96.98	96.88
9.30	96.77	96.67	96.57	96.46	96.36	96.26	96.15	96.05	95.95	95.85
9.40	95.74	95.64	95.54	95.44	95.34	95.24	95.14	95.04	94.94	94.84
9.50	94.74	94.64	94.54	94.44	94.34	94.25	94.15	94.05	93.95	93.85
9.60	93.75	93.65	93.56	93.46	93.36	93.27	93.17	93.07	92.97	92.87
9.70	92.78	92.69	92.59	92.49	92.40	92.31	92.22	92.12	92.03	91.93
9.80	91.84	91.75	91.65	91.56	91.47	91.38	91.28	91.19	91.10	91.00
9.90	90.91	90.82	90.73	90.64	90.55	90.46	90.36	90.27	90.18	90.09

NEW TRACK AT KANSAS CITY

THE gang from Kansas City, Mo., announce the construction of a 1/4th mile cable track at 7810 East 15th St. Their track is being built to latest and fastest specifications and they anticipate a completed job to compare with the best. If luck held with them, the new track should be in operation at this time. So let's look to Kansas City for some good times!



Fit scene at the El Paso race. Left—Carl West, G. Dinwiddie, Fred Lind and Carl Rosenblum.

LONG ISLAND PLANS MONTHLY SANCTIONED RACES

AT ONE of their most interesting monthly meetings recently held, the Long Island Auto Racing Society brought up and passed several resolutions affecting all race car fans in the vicinity of New York City.

The membership voted to rejoin the AMRCA and dates were set for a sanctioned race each month. This Club takes pride in being one of the oldest and continuously active clubs in the country.

The Race Committee responsible for the big June 15th Long Island Championship Event has completed plans and announced that many prizes donated by manufacturers had been received. These have a total value of roughly \$200. Included is a complete Pacemaker car with Hornet engine to be given as first prize to the winner of the Proto race. This class will not be split into two groups. A prize of like value will be given to the winner in Spur and awards will be made beyond 10th spot in each event. There will be only two classes, Proto and Spur.

Sanctions from AMRCA were requested for the following dates: June 15, July 6 (Regionals), August 17, September 1 (Harold Loose Memorial), and October 19. The Club passed unanimously to hold sanctioned races under IMRCA rules and dates were set for July 20, September 14 and October 3.

Due to post-war racing activity, this Club has received many applications from prospective members. As their by-laws limit membership, this group has generously allowed visitors to use their property due to the lack of other tracks. This situation has become increasingly difficult for the club members due to the great number of visitors who appear at their track each Sunday. The host club has been deprived of the use of its own equipment and has made an effort to remedy this for the benefit of all concerned. Sanctioned races will be held at this track

at least once a month until November, and the track will be reserved for members only, except on the sanctioned dates just mentioned.

Believing that there are now sufficient fans who could and should band together for the formation of another club and that a new track in the metropolitan area is almost a necessity, this action was suggested as a benefit to the sport. This ruling will provide better racing conditions and still allow the visitor to use this excellent track. There will also be prizes and the outsider will now receive something for his track fee beside the mere privilege of running.



Photo by Fitzgerald

Fred Luning, of the Long Island Club. Fred is the guy that held the speed record in Spur Gear for many months at 118.73 MPH on a 1/4 mile track.

ESPERSEN WINS EL PASO MEET

RAY ESPERSEN took over the Spur Gear Class with a speed of 101.12 MPH at the El Paso Miniature Auto Races held in Grandview Park, El Paso, Texas, on April 27th. Knowle Vance took first in Proto with 92.78 MPH, and Frank Able proved tops in the Hot Rod division with 75 flat.

El Paso track records to date are 103.85 MPH in Spur and 94.73 MPH in Proto. Results of meet follow:

SPUR GEAR	MPH
Ray Espersen.....	101.12
Fred Lind.....	97.77
Lloyd Escontrias.....	96.77
Clarence Kendall.....	92.78

HOT ROD	MPH
Frank Able.....	75.00
J. Brock.....	71.42

PROTO	MPH
Knowle Vance.....	92.78
Fred Lind.....	90.00
B. Brock.....	88.23
S. Poland.....	81.42
J. Brock.....	76.92
L. Escontrias.....	72.00



Ray Espersen about to start his winning run at El Paso race, using a McCoy powered Mathews car. B. Sully, line man, is shown at left.

SALINA CLUB READY TO ROLL!

By JOE ADDISON

NO, IT isn't any secret at all—the Salina Club is just doing a bit of fast work! Car racing at the old track seemed to bother a few people and to avoid any trouble and make things pleasant for as many as possible the Club is moving their track to a new location in beautiful Thomas Park. Rest rooms, running water, picnic grounds and shade are going to be some of the items which will make the new location more desirable for both racing fan and racer alike. The track is located at the north edge of town on U. S. Highway 81. By the time you read this article, we should be burning up the track with some of the old and new cars alike. The track is not far out in the country—just at the edge of town, and not much farther from the center of town than the old track so transportation should be no problem.

The Model Craftsman

Comes the next issue of MC and we should have some speeds to put out on the new track. The Salina track should be a hot job so far as speed is concerned as this is about the fourth track built. The combination of experience and recommendations from other experienced hands should deliver a good job. The same welcome holds true for all visitors to come out and give the "hot ribbon" a trial spin, so get in touch with the local hobby shop or yours truly.

TRI-CITIES MAKES FIRST LAP!

NEW record? Well, a good one, anyway! Time for the first lap on the new track being built at the Tri-Cities Airport in Endicott, N. Y., is *four days!* Of course this time was made with a hand-operated steam shovel in excavating out the circle for the track. But things are really buzzin' now and construction of the track should by this time be finished, having set a deadline of June 1st.

The track was originally planned to be a 105-ft. diameter job, but since last year has been changed to a 42-ft. radius. This was done through necessity because of construction costs, but everyone is in perfect harmony, despite the change. The track has a $\frac{1}{2}$ " taper in three feet to the outside to facilitate good drainage and assist in better tethering at the starts. There will be pit space for about 70 cars, with room for expansion should there be a greater demand for pit space. Any racing car clubs within a 150-mile radius interested in forming a racing circuit with the Tri-Cities gang, should contact the club immediately. In fact, anyone interested in racing at their track should speak up. Address your correspondence to Dave Reed, Jr., Box 11, Vestal, N. Y.

AMRCA SANCTIONED MEETS FOR 1947 SEASON

- June 8.....Kankakee, Illinois
- June 15.....Long Island, N. Y. (Championships)
- June 22.....Bakersfield, California
- June 22.....Peoria, Illinois
- July 6.....Eastern Regionals at Long Island, N. Y.; Mid-West Regionals at Waukegan, Ill.; Southern Regionals; Western Regionals.
- July 13.....St. Louis, Missouri
- July 20.....Bakersfield, California
- July 20.....Indianapolis, Indiana
- July 20.....Salina, Kansas (State Meet)
- July 27.....Columbus, Ohio
- July 27.....New Castle, Indiana
- Aug. 1, 2, 3 or 4.....Nationals (location to be decided by popular vote)
- Aug. 3.....Harvey, Illinois
- Aug. 10.....Kankakee, Illinois
- Aug. 17.....Hartford City, Indiana
- Aug. 17.....Long Island, N. Y.
- Aug. 24.....Bakersfield, California
- Aug. 24.....Harvey, Illinois
- Aug. 30, 31.....Detroit, Mich. (Midwestern Champ.)
- Sept. 1.....Harold Loose Memorial Race, Long Island, N. Y.
- Sept. 7.....Boston, Mass.
- Sept. 7.....Lafayette, Indiana (All-Proto)
- Sept. 14.....Peoria, Illinois
- Sept. 28.....Bakersfield, California
- Sept. 28.....New Castle, Indiana
- Oct. 11, 12.....San Francisco, California
- Oct. 19.....Long Island, N. Y.

Above dates and locations are subject to change by request of Clubs concerned. Only two bids have been received from Clubs on Regionals and Nationals. Please send formal bids to AMRCA Contest Board.

DURO-MATIC

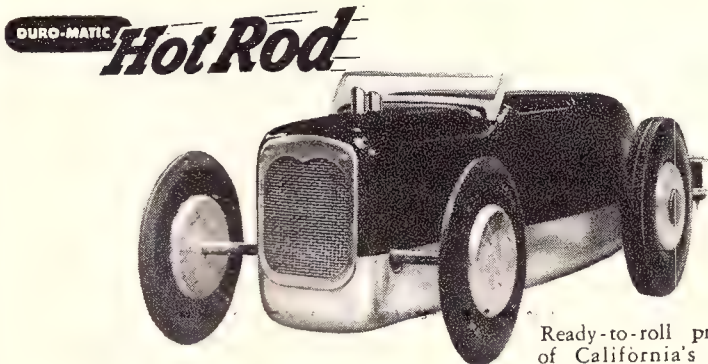
You'll lead the pack on every track!

You're off to a running start at breaking records when you choose your "weapon" from this race car family. Each car is fast as a fox . . . sleek as a new knife . . . easy to work with. Each is furnished complete with fitted fuel tank, ready for easy engine installation. *See them at your dealer.*



Here's the closest thing to flying on four wheels, Dick McCoy's precision design for speed *plus*.

\$4250



Ready-to-roll prototype of California's famous dry lakes racing roadsters. Precision balanced.

\$4250



Official world's record-holder, this prototype won 15 of first 17 places, Fresno, Calif. (Feb. 1947).

\$4250

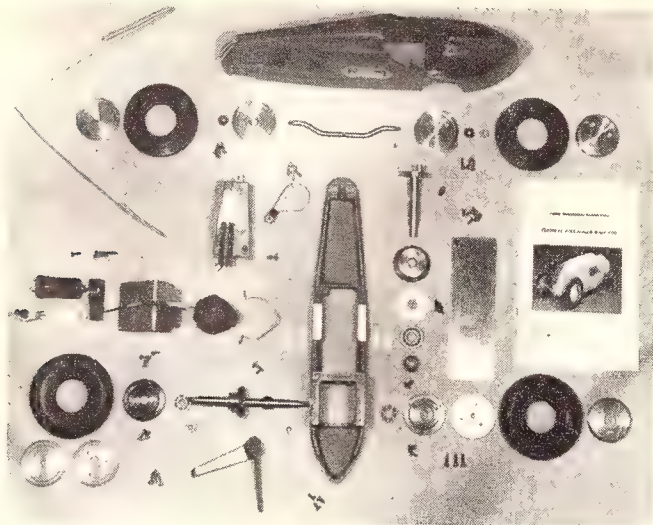


Checkered Flag Line

DURO-MATIC PRODUCTS COMPANY

Hollywood 38, California

"SPEEDWAY PACEMAKER"



A COMPLETE KIT OF ALL THE SPEEDWAY PACEMAKER PARTS

The Speedway Pacemaker Builders Kit

"The makers of the already famous Speedway Pacemaker now are producing a complete kit of precision machined parts ready for assembly into the cleanest-looking and fastest-running prototype, model gas engine race car on the market today. This kit is especially for those fans who like to build 'em themselves, and every detail of this kit will be completely machined, ready for assembly. Every single part of the Speedway Pacemaker, the car noted for completeness, will be there, enabling the fan to construct his own model of this well-known car." \$42.50

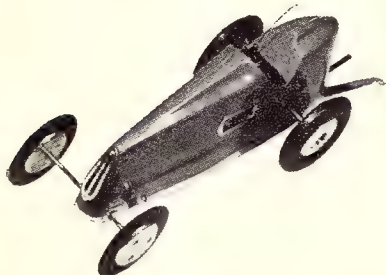
—AND FOR THAT ALL-IMPORTANT MAINTENANCE on the CARS YOU HAVE . . . of the ONES YOU WISH TO DESIGN YOURSELF:

We are happy to announce that all or any of the Speedway Pacemaker parts are available from stock; from gears and axles to wheels and gas tanks. Write us for complete parts listing. Note some of the major available parts in our factory stock today.

Axles, Free & Drive
Body, Laminated Plastic
Pinion & Bevel Gears
Special Crankshafts

Bridle Brackets
Gas Tanks
Radiator Grilles
Ball Bearings

Flywheels
Battery Packs
Exhaust Ports
Tires



AND

NATURALLY—

This is all in addition to our regular production SPEEDWAY PACEMAKERS, the cars noted for completeness, available in three styles; complete with hornet engine installed for \$110.00, complete less engine for \$55.00, or complete with your own "pet" engine mounted for \$85.00. Write us or see your nearest dealer for complete descriptive literature.

STANDARD MACHINE WORKS, INC.

1327 N. Capitol Ave., Indianapolis, Ind.

Dealers and Distributors: Write for information and Discounts.

CHICAGO CABLE FANS

By "HAP" WYCKOFF

A GAIN we present another Cable Track Fan from the Chicago area—Milton "Red" Davis, of Harvey, Ill. "Red" was one of the five original members of the Harvey Club who put up their own money to build the track, and who now serve as a Board of Directors of the Club. As a matter of fact, if it were not for "Red's" enthusiasm and willingness to work, there would probably be no Harvey Model Race Car Club today.



"Red" Davis, of the Harvey Model Race Car Club. He's the fella to watch this year!

Red makes his home at 107 E. 149th Street, Harvey, Ill., with his wife and lovely 3-year-old daughter Marcia. He has a very complete shop in his garage, and is always willing to help anyone build up a new car or repair an old one. His "know how" has been a big factor in helping the other Harvey members bring home some trophies.

He was new to the sport in 1946 but managed to make a name for himself with several trophies. This year, as we said, he is the "man to watch." At Danville, the first race of the year, he placed first with his Proto and second with his Spur. At the recent Lafayette All-Proto race, he again was first, doing over 107 MPH. His Proto has been clocked at 110 and his Spur at 120, unofficially, so you can readily see that he will be heard from this season for sure.

THE "SENATOR" IS BUSY, SUH!

THAT genial gentleman from the sunny south, Fran "Senator Klaghorn" Brennan of Monroe, La., has really had his nose to the grindstone lately. But between times, Fran is in there pitching for all he's worth to further the sport. Acting in the capacity of AMRCA Regional Director of the Southwest territory, Fran proudly advises that the New Orleans gang is on the move again. Temporary officers have been elected to reorganize the club as follows: Henry Heymann, Jr.; Whelan Norman; W. E. Wunderlich. The New Orleans boys have a 70-ft. cable

The Model Craftsman

track located at Pontchartrain Beach. A non-sanctioned meet was held on June 1st to get the ball rolling. *Good luck, New Orleans!*

Everyone will remember the tough break handed out to the Monroe Club this past New Year's Day when miserable weather all but ruined their big Classic Meet. Considerable thought has been given to this date and because of uncertain weather at this time of the year, the Annual Classic will now be held on November 11th. At this time of the year, the Louisiana boys are assured of perfect weather.

According to Fran, the Gang from Shreveport, La., will soon have a new track. At the moment, Brennan is making plans to form a Southern Circuit to include Shreveport, New Orleans, Monroe, La., and Mobile, Ala. Anyone desiring information on this proposal should contact Fran Brennan, 515 Ouachita Ave., Monroe, La.

BUFFALO TO IMPROVE TRACK

THE Buffalo M. R. C. A. held their first meet of the season on June 1st, for members only, as a preliminary race for competition to come.

At their last meeting, members voted for improvements to their Transit Road race track, and also appropriated money for improving parking facilities to give members and fans a better opportunity of witnessing meets.

PRESENT SPEED RECORDS

THIS is your standing box score representing TAMRCA speed records as of January 1, 1947. These are the present existing records as reported to this office, showing highest speeds established on both cable and rail tracks, type car and engine used, together with location and date of established record:

1/16th MILE CABLE TRACK

SPUR (1/4 Mile): Dick McCoy, San Francisco, July 7, 1946—116.73 MPH (McCoy Car, McCoy Engine)
 PROTO (1/4 Mile): Howard Lee, San Francisco, July 7, 1946—108.95 MPH (Own Design Car, Hornet Engine)
 STREAMLINE (1/4 Mile): Jim Gilmore, San Francisco, July 7, 1946—103.32 MPH (Special, Hornet Engine)

1/24th MILE CABLE TRACK

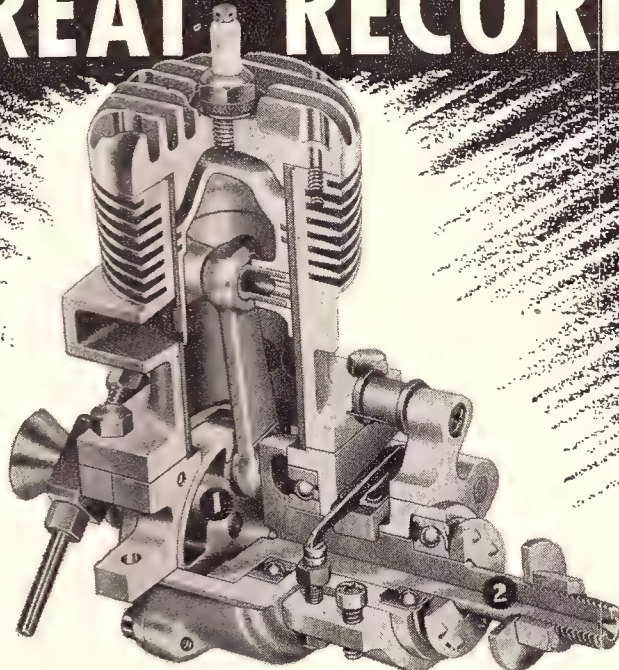
SPUR (1/4 Mile): W. Thomas, Jr., Eustis, Feb. 22, 1947—120.32 MPH (Own Design Car, Hornet Engine)
 SPUR (1/2 Mile): Warren Borden, Detroit, Aug. 1, 1946—115.97 MPH (V-Car, Hornet Engine)
 SPUR (1 Mile): J. Crossan, Detroit, Aug. 2, 1946—113.38 MPH (V-Car, Hornet Engine)
 PROTO (1/4 Mile): Dale Martell, Waukegan, Ill., Sept. 1, 1946—113.21 MPH (Own Design Car, Hornet Engine)
 PROTO (1/2 Mile): Howard Lee, Detroit, Aug. 1, 1946—107.97 MPH (Own Design Car, Hornet Engine)
 PROTO (1 Mile): Howard Lee, Detroit, Aug. 2, 1946—109.02 MPH (Own Design Car, Hornet Engine)
 STREAMLINER (1/4 Mile): Jim Gilmore, Detroit, Aug. 3, 1946—104.98 MPH (Special Hornet Engine)
 STREAMLINER (1/2 Mile): Jim Gilmore, Detroit, Aug. 1, 1946—102.50 MPH (Special, Hornet Engine)
 STREAMLINER (1 Mile): Jim Gilmore, Detroit, Aug. 2, 1946—100.44 MPH (Special, Hornet Engine)

1/16th MILE RAIL TRACK

STREAMLINE: W. Weller, Chicago, Aug. 25, 1946—79.30 MPH (Hornet Engine Used)
 PROTO: Clyde Rohrer, Chicago, July 18, 1946—76.40 MPH (Hornet Engine Used)

June, 1947

Good Reasons For GREAT RECORDS



A worthy companion to the greatest engine ever manufactured is the Hornet Race Car and U-Control Magneto. Will fit all Hornet engines and other competitive makes of the same design. Now available at your local hobby dealer.

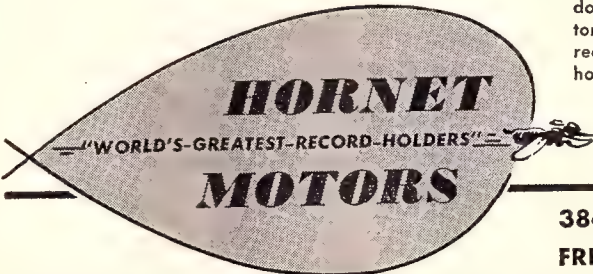
Still at pre-war prices, complete except for coil condenser and spark plug.

\$35.00 MODEL "60-A"
 for guide line or free-flying planes. Model "60-B" for boats. Model "60-RC" for race cars.

These are a few of many HORNET records:

- Spur Gear Record, Waukegan, Ill., Sept. 1, John Crossan, V car Hornet powered, 118.27; Dale Martell, Proto Hornet powered, 113.21; Loose Memorial, Fred Luning, Spur Gear Hornet powered, 118.73; W. T. Thomas, Jr., New Spur Gear Record, Own Car, Hornet powered, at Eustis, Florida, 120.32.
- Speed Boats: Joe May, Detroit, Mich., July 4-6, 1946, new world record in Class D and E, speed 65.53 m.p.h., winning Gar Wood trophy and Model Craftsman plaque.

If your local hobby dealer does not have HORNET motors in stock, we will ship direct from factory within 24 hours of receipt of order.



3847 VENTURA BLVD.
 FRESNO, CALIFORNIA

SERVICE SPECIALISTS!!

TOP QUALITY MERCHANDISE FOR
IMMEDIATE DELIVERY

McCOY
(PROTOTYPE)



\$45.00

DOOLING Prototype

COMING SOON: The NEW DOOLING
MOTORS. Orders being accepted now.

"Hornet" \$35.00

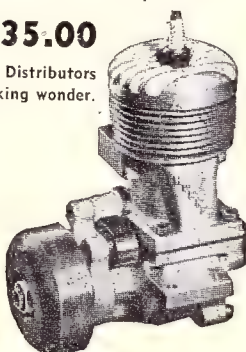
We are National Distributors
for this record breaking wonder.

NEW HORNET
MAGNETOS!!

For Aircraft
\$24.75

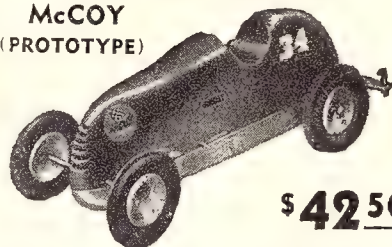
Boats & Race Cars
\$22.75

A COMPLETE LINE
of Racing Hydro-
planes now
available



RAILROAD FLASH

DEALERS: Write today and operate an outstanding
and profitable rail department. We carry com-
plete lines of "O" and "HO" Kits from Picard,
Varney, Mantua, A-C, Skyline, Ideal, Lehigh, Tru-
Scale, Pittman, Starling, Pioneer and Lobough.



\$42.50

Newest in the line of McCoy Champions.
Cast Magnesium Body. New type rear end.
Complete with gas tank, switch and bridle.

The McCoy Racing Engine \$35.00
The McCoy Hot Rod \$42.50
The McCoy Super Streamliner \$42.50

PARTS ANNOUNCEMENT!!!
SPEEDWAY PACEMAKER RACING CARS
C&R WHEELS AND TIRES
FRANCISCO FUELS

All Ready for Immediate Delivery!!
DEALERS: Write, Wire or Phone Today

TROST

Model Airplane and Hobbies

3111 W. 63rd St.

CHICAGO, ILL.

OFFICIAL WORLD'S RECORD ROADRUNNER AMERICA'S FIRST ROADSTER CAR

Buy direct from Mfg.
and save.

Price complete,
C.O.D. \$18.50, Less
Engine. Calif. buy-
ers add sales tax.



Unfinished kit
form, C.O.D.
\$12.50

Complies with all A.M.R.C.A.,
I.M.R.C.A. Specifications.

ED'S SPECIALTY COMPANY

P. O. BOX 588

BELL, CALIF.

HORNETS AGAIN!

60-RC FOR RACE CARS

60-B FOR BOATS

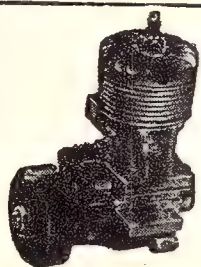
60-A FOR PLANES

ORDERS NOW BEING FILLED

Western Dealers Write for Discounts

We Specialize in Race Cars and Racing Motors

1327 JAY ST., SACRAMENTO, CALIF.



\$35.00

"HOBBYCRRAFTS"

By-Laws for AMRCA Clubs

ARTICLE 1.

Meetings and Quorum

Sec. 1.—The regular meetings of this Club shall be held on (Thursday of each week at 8:15 P.M.) and at the Club Rooms or at such place as a majority of the members may decide upon.

Sec. 2.—Special meetings may be called by the President, or by the written request of five (5) members. Notice of special meetings of at least three (3) days, together with notice of the object of the meeting shall be given to each member by the Secretary, and no other business than that specified in the notice shall be transacted at such meeting.

Sec. 3.—Seven active members of the Club shall constitute a quorum at any regular or special meeting for the transaction of all business. If at any meeting it be found that there is no quorum, those present shall adjourn pro tempore.

Sec. 4.—Any person who is not an active, or honorary member of the Club may attend a regular meeting; provided, such person has some business to transact with the Club, or has any matter of special interest to discuss with the Club; and provided, such leave to attend is granted through a motion, and such motion carried by a majority of the members present. A visitor shall not be allowed to debate on any matters concerning the Club.

ARTICLE 2.

Initiation Fees and Dues

Sec. 1.—The initiation fee for Active Members shall be () Dollars plus one month's dues which must be paid at the time the application is filed. Active membership dues shall be () Dollars per annum, payable in advance or in monthly installments of () Dollars each month. The first month's dues must accompany the initiation fee. If the candidate is elected at the first meeting of the month, the aforesaid dues shall apply to that month; but if he is elected at the last meeting of the month, then the aforesaid dues shall apply to the following month.

Sec. 2.—Any member becoming three (3) months in arrears in payment of dues, fines and assessments shall be notified and at expiration of four (4) months, arrears still unpaid, shall be automatically dropped from the membership roll.

Sec. 3.—Every month at the first regular meeting, the Treasurer shall submit to the Secretary a list containing the names of all members who are in arrears for dues or other indebtedness to the Club, stating the amount in an itemized form.

Sec. 4.—If any member is unable, through physical disabilities or other misfortunes, to pay his debt to the Club, his case shall be brought before the Board of Directors for investigation and disposal.

ARTICLE 3.

Funds and Disbursements

Sec. 1.—All moneys collected for initiation, dues, fines, track fees, race entree fees, or from other sources shall be known as the general fund, and all expenses of the Club shall be paid therefrom.

Sec. 2.—Contributions or donations must be proposed and voted upon at a regular Association meeting. The maker of such motion shall state purpose and amount.

Sec. 3.—When the Club deem it advisable, the Treasurer shall be required to give a bond of an indemnity company in the sum of Five hundred (\$500.) Dollars or a higher amount, but in keeping with the amount of money on deposit, or handled by the Treasurer, the cost of which shall be paid by the Club.

ARTICLE 4.

Liability and Penalties

Sec. 1.—Any destruction or injury to the property of the Club, or to anything in its charge shall be paid for by the member causing the same, and the amount to be paid shall be determined by the Board of Directors.

Sec. 2.—Any member may be expelled, or may be censured for any infraction of the Club's rules, Constitution or By-Laws, or for any conduct unbecoming a gentleman, or for any conduct considered injurious or hostile to the interest of the Club. A vote in favor of such expulsion must be carried by a two-thirds (2/3) vote at any regular meeting, provided a written notice of such proposed action shall have been given the offending member, together with a written copy of the charges against him, at least seven days previous to the meeting at which such action will be taken. The President shall have the power to impose a fine in lieu of the aforementioned penalties, such a fine shall not be less than () but shall not exceed () for any one offense; said fine cannot be remitted except at same meeting when imposed.

Sec. 3.—Any Officer or Committeeman absenting himself from three consecutive meetings without reasonable excuse, his office shall be de-

The Model Craftsman

clared vacant and an election ordered to fill the same.

Sec. 4.—Any member elected to office and failing to be installed within three meetings after his election, his office shall be declared vacant and an election ordered to fill the same.

Sec. 5.—In case of resignation, death or disability of any officer, the office shall be filled at the next regular meeting by an election.

Sec. 6.—Any member who resigns, or who is expelled and dropped from the Club; his interest in the property of the Club and all title to the same terminates and ceases with the termination of his membership.

ARTICLE 5. Miscellaneous Provisions

Sec. 1.—Should an exigency arise not provided for in the Constitution and By-Laws, the President shall call a meeting of the Board of Directors and they shall have full power to do what they deem for the best interest of the Club.

Sec. 2.—This Club shall, so long as the members desire, remain affiliated with the organization officially known as the "American Miniature Racing Car Association" but shall be governed by this Constitution and By-Laws.

Sec. 3.—If it should become desirable, or a vital necessity for the Club to withdraw from the organization known as the "A.M.R.C.A.," the Club reserves the right to do so. The proposition to withdraw shall be put in the form of a resolution and in writing. The member who presents such resolution to the Club must be a member of the "A.M.R.C.A.," providing that fifty percent (50) of the Association members are members of the "A.M.R.C.A." at the time such resolution is presented; if less than fifty percent (50) are affiliated with the "A.M.R.C.A." then, any member in good standing can present such resolution. The resolution cannot be acted upon at the same meeting it is presented, but action shall be taken the following regular meeting, and all members shall be notified to that effect.

Sec. 4.—Any member who may on account of business or other reasonable causes be compelled to absent himself from the Active membership zone shall be granted leave of absence, and immunity from payment of dues during such time as he is absent providing his dues are paid up to the time of his departure.

Sec. 5.—If it should become necessary or when two-thirds of the members at any regular meeting so desire, for any stated purpose, consistent with the aims and objects of this Club, an assessment may be ordered and an equal sum levied on each member, said sum to be paid to the Treasurer within thirty days from date that

it is levied, and shall not exceed One Dollar per member. Not more than one assessment can be levied in any one month.

Sec. 6.—An Auditing Committee consisting of three members shall be elected at the first regular meeting in June and December. They shall examine the books of the Treasurer and the Secretary, and compare all bills, receipts and vouchers with their corresponding accounts in the books, and all the financial transactions of the Club, and make a faithful report of their finding at the next regular meeting of the Club, their duty as a committee, cease when their report has been accepted by the Club.

Sec. 7.—Members shall leave with the Secretary any change of address.

Sec. 8.—Every member shall be supplied with a copy of the Constitution and By-Laws.

Sec. 9.—The American Manual of Parliamentary Law shall be the governing authority on all questions of order.

ARTICLE 6. Amendments of By-Laws

Sec. 1.—These by-laws shall not be amended nor shall any part or section of them be repealed or altered, except by an amendment in writing presented at least one regular meeting previous to such change and such amendment must receive a two-thirds vote of the members present. They may, however, be suspended by a two-thirds vote of the members present at any regular meeting. All members shall be notified by mail as to the time and place when amendments to the by-laws will be acted upon.

Sec. 2.—This Constitution and By-Laws shall be effective on and after () and shall supersede all other By-Laws or any other Constitution now in use.

ARTICLE 7. Order of Business

1. Roll Call of Officers.
2. Introduction of Visitors (and the voting of them the courtesy of the Club).
3. Reading minutes of previous meeting.
4. Reports of Committees (Standing and Special).
5. Election of new members.
6. Pledging and introduction of new members.
7. Proposals of new candidates.
8. Reports of Officers.
9. Election of Officers (annually or on special).
10. Reading of communications, bills and orders.
11. Old and unfinished business.
12. New business.
13. Receipts and disbursements.
14. Good and welfare.
15. Adjournment.

Approved and adopted ()

SUPER-SONIC GEARS

Babcock design Super-Sonic Gears hold all world speed records. Super-Sonic Gears are made of finest

alloys—super-finished—freest running gears made.

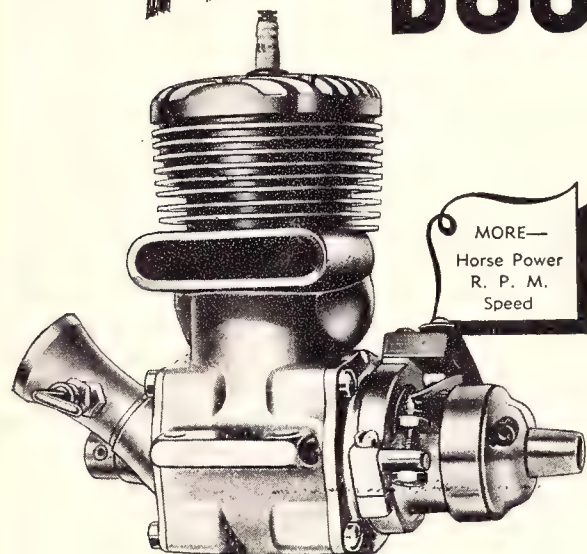
Bevel gears have hub inside ring gear, pinion gear and drive shaft one solid piece, minimum overhang on pinion bearing designed for race cars. Ratio 1.9 to 1. Price per set \$12.50.

SPUR GEAR matched, high precision, free running design, special pitch, highest RPM. 1 1/8" center distance. Ratio 1.75 to 1. Price per set, \$6.00.

Immediate delivery—at your dealer—or write to
SUPER-SONIC ENGINEERING CO.
629 Bryant Street, San Francisco 7

THE NEW DOOLING ENGINE

COMPANION TO TYPE F PROTOTYPE RACE CAR



MORE—
Horse Power
R. P. M.
Speed

The finest and most powerful .60 cu. in. Engine on the market. Single cylinder, two cycle, weight 13 oz. For cars, airplanes and boats. Get your order in NOW.



Finest in
Race Car
design and
workmanship

Ball Bearing Drive Unit
Ball Bearing Front Wheels
Body 2-piece die cast magnesium, knee action front end, flywheel and double universal included.

Price, complete—\$45.00

Note to Dealers: If your distributor cannot supply, write us direct.

SEE YOUR LOCAL DEALER
WRITE FOR CIRCULAR

DOOLING BROTHERS

5452 WEST ADAMS BLVD.
LOS ANGELES 16, CALIF.

SUBSCRIBE TO THE NEW BERKELEY CATALOG

Model Airplanes - Race Cars - Speed Boats



25c PER COPY

Loose leaf bound, listing hundreds of model items. New sheets, including performance charts, engine information, and other valuable data mailed three times during the year.

TEAR OFF AND MAIL

BERKELEY MODEL SUPPLIES, Dept. MC-5
140 GREENPOINT AVE.
BROOKLYN 22, N. Y.

Enclosed find 25c. Please send me the Berkeley Catalog and additional pages as they become available for one year.

NAME

ADDRESS

99% RUNNING LESS THAN 1% STARTING OK's CO₂ IGNITIONLESS 3/4 oz. ENGINE



Smallest, lightest expansion-type reciprocating action power plant.

NO

Spark Plug
Gasoline
Coil (Wiring)
Batteries

CO-2 is the "flyin'est" miniature engine ever perfected. Positive "flip" starting. Speed Adjustable. 7,000 RPM: 20 to 60 sec. runs from single carbon-dioxide cartridge. Displ. .0178; Bore .275; Stroke .300.

COMPLETE
With
Holder
and
Plans
\$7.50

Pats. Pending with 14 claims.
IN CANADA: HERKIMER "OK" ENGINE CO.,
511 Hernant Bldg., Toronto, Canada.
Export Office: 120 Wall St., N. Y. 5
Cable Address: Concordia, N. Y.

Herkimer TOOL AND MODEL WORKS.
INC. (MC-6), Herkimer, New York

CO-2 is made and guaranteed by the makers of the famous "OK" line.



WHEELS AND TIRES FOR MODEL RACE CARS

WHEELS—Dural, Mirror Finish, Deep Bead, Positive Grip.

TIRES—Finest rubber, designed for high speed, uniform stretch. Soft, Medium and Extra Hard.
4" Drive Tires—\$2.50 pair. 3 1/2" Streamlined Front Tires—\$2.00 pair. Tires and Wheels—\$10.50 set 3/16" Precision Bearings—\$1.85 each. Complete set—wheels, tires and bearings—\$13.75 per set

Immediate delivery—at dealer—or write to
SUPER-SONIC ENGINEERING CO
629 Bryant Street, San Francisco 7

DOPE ON NATIONALS

(Continued from page 10)

Nationals and, therefore, would be unable to exercise their right to compete for National honors.

It was recommended that the 1947 National Championship plans be amended and that the National Meet be opened up for competition, as in the past, for all comers. At the same time, it was recommended that all state qualification meets thus far sanctioned, be re-sanctioned as State Championship Meets and that those sponsors who have been successful in establishing a budget sufficiently large to award expense-paid trips to the Nationals, award them as planned to their state champions.

The Executive Council and Contest Board were asked to vote on this question according to the wishes of the modelers in their district. All but a few votes have been returned and, without exception, all have been in favor of adopting the plan outlined above.

Inasmuch as sanction has been issued by the Contest Board to the American Legion and the 40 & 8 for the National Championship Meet to be held in Minneapolis and Monticello, Minnesota, on August 18-22, the sponsors were contacted and the Academy has been informed by National Legion Headquarters that more than adequate facilities are available to conduct the Nationals on an open basis. Therefore, the date and location of the 1947 National Championship Contest will remain unchanged.

All AMA Leader Members now working toward the organization of state championship meets are urged to continue their efforts in order that as many states as possible may hold championship contests in 1947.

AMA Headquarters will continue to issue periodical bulletins regarding the Nationals and if any additional information is needed with regard to either the National Meet or the State Championship Meets, please contact your local AMA Officers or Contest Board Member or, if you wish, write directly to Headquarters.

LINDEN CLUB TAKES TO AIR

WITH the approach of the summer season, members of the Linden Model Aircraft Club, Linden, N. J., now well in trim following a winter of indoor and U-Control flying, are starting the contest season off with a bang. Election of officers held April 4th resulted with the following staff: President, Silvio Colletti; Vice-President, Leon Shulman; Secretary, Ann Schmidt.

The Annual State Rubber Powered Meet will be held July 6th, with a rain date set for July 13th. Events will include Fuselage, Stick, Towline and Hand-launched Glider, all Classes. The meet will be sanctioned by A. M. A., with plenty of prizes in the offing.

MOUNTAIN STATES SECTION

By JOE ADDISON

DUE to weather conditions and other items beyond the control of man, the racing activity has been curtailed. The Denver Club is starting the season with a new track that should be very fast while the Salina Club is in the process of also installing a new track. The Tucson Club advises that membership is increasing and the Club is open for additional members. Their meetings are held on the first and third Fridays of each month at Townsend's Hobby Shop.

Many of you fellas know that genial Robert (Bob) Graham, down Phoenix way, has accepted the responsibility of becoming Assistant Director for this section to hold off ice until the termination of this term with yours truly. Bob will take over New Mexico, Arizona and Utah. If any of you Clubs in these states feel lonely, just draw up a chair and talk it over with Bob. We're sure he will be only too glad to help all he can. Yep, I'll still be around for these states too, and if you're in a rush and cannot find Bob, just pull my chain and I'll be listening!

FUELS

"POWER MIST"
"SPITFIRE"
"BLUE BLAZER"

The original miniature engine fuels.

Chemically treated castor oils and alcohols.

16 years of continuous testing

"No gas and petroleum oil mixes."

Supercharged and fortified castor oils.

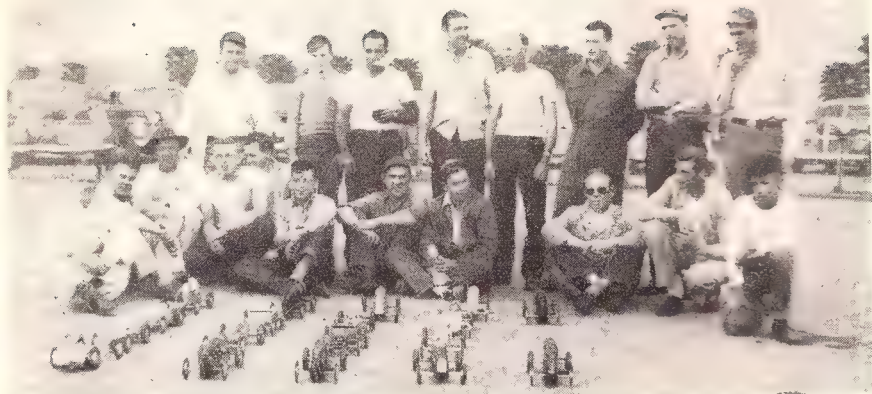
61 official world records.

Demanded by professional racers.

FUEL FACTS AND FORMULAS: How to determine the correct fuel. Full information and literature—at your dealer, or send stamped addressed envelope.

FRANCISCO LABORATORIES

3787 Griffith View Drive • Los Angeles 26, California



Some of the boys from Glendale, Calif. This Club was reorganized last November and now has about 50 members.

GLENDALE HOLDS "PORTABLE" MEET

MEMBERS of the Glendale Race Car Association held a trophy meet on March 30th, at the Santa Anita Parking Lot, Arcadia, Calif. Racing conditions were not the best, as *portable* equipment was used, even to the crash wall, but it does show the enthusiasm of these Southern California boys. This same location has been used every Sunday by the Club pending the building of a permanent track in Glendale, which should be ready within a short while.

Seven cups and twelve merchandise prizes were given away. Andy Anderson, well known in model racing circles, donated the prize for the best appearing car which was won by Henry Schmidt. The Solv-X Chemical Co., of Glendale, furnished a sound truck and kept the records for the day. Mr. Carl Newell, president of the Club and local hobby shop owner, did a fine job of "horsing" and helping the younger members of the club.

SPUR GEAR	MPH
Andy Anderson.....	104.65
C. L. Jolson.....	99.44
Chuck Shamway.....	98.36

HOT ROD	MPH
Chuck Shamway.....	77.58
F. Barbaro.....	71.97

PROTOTYPE

Jack Mishimoto.....	96.35
Andy Anderson.....	92.87
Dale Springer.....	91.83
Carl M. Wielpuetz.....	91.82
N. J. McKend.....	91.37

EXCUSE US PLEASE!

THE Mighty Midgets of Reading, Pa., take this time to excuse themselves for the erroneous message they sent out to the racing clubs at large, a mistake over which they had no control.

From last reports, they expected to have a rail track all ready for running by the end of May, but that was three months ago. Due to that old reliable excuse—*material shortages and building restrictions*—they are now completely abandoning any hopes of a rail track for this year.

The boys have leased some land adjoining the Reading Fair Grounds and are at this time better than 75% completed with a new cable track. With good luck, the club will have had their first meet on May 30th, so look to the Mighty Midgets for good reports! For further information, contact Cal Lieb, Jr., 1234 Birch St., Reading, Pa.

A WORLD'S RECORD

AT
NEW YORK'S
MADISON SQ. GARDEN

14,000 LAPS IN 128 FLIGHTS

DRONE B GOLD CROWN

REVOLUTIONIZES
FLYING & FLYING WEIGHT

diesel
DESIGN
SAVES **6** OZS.
deadweight
BURDEN

SPARK PLUG	.3 oz.	NO
COIL	2.2 oz.	NO
BATTERY	2.1 oz.	NO
CONDENSER	.4 oz.	NO
SWITCH	.5 oz.	NO
BATTERY HOLDER	.2 oz.	NO
WIRES	.3 oz.	NO

DRONE B

AMERICA'S FIRST
AMERICA'S FINEST



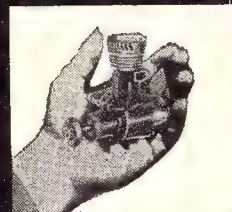
diesel

.297
CU. IN.
DISPL.

AT YOUR
DEALER

Out of the Carton
Ready to Run

READY
TO
RUN **NOW
21⁵⁰**



If No Drone Dealer
Near You, Write
to Factory



Drone "B" is the modern design of Leon Shalimen, one of America's outstanding aviator-modelers.

DRONE Engineering, Inc.

125 BROAD STREET, ELIZABETH, N. J.

For Immediate Shipment
**GOOD BROTHERS
RADIO CONTROL**

50-54 mc. Amateur Band

\$59⁵⁰

Batteries, \$7.50 Extra

COMPACT and LIGHTWEIGHT (13 oz.)
FULL INSTRUCTIONS INCLUDED
RECEIVER ONLY ILLUSTRATED. PRICE INCLUDES TRANSMITTER

Amplified Antenna

144-148 mc. Amateur Band

Portable Transmitter

Transmitter Adjustment

"Slide-Bar" Control

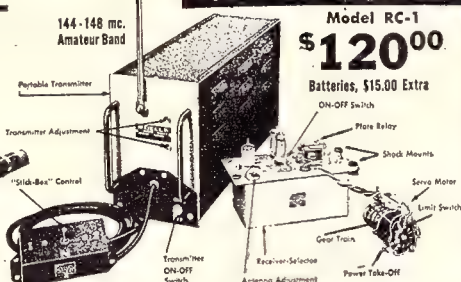
Transmitter ON-OFF Switch

and

BELL

Radio Control

Model RC-1
\$120⁰⁰
Batteries, \$15.00 Extra



HEADQUARTERS for
Everything in RADIO CONTROL
TUBES • BATTERIES • RELAYS • ESCAPEMENTS
WRITE FOR FREE DESCRIPTIVE LITERATURE INCLUDING
PRICE LIST ON ACCESSORIES, ENGINES AND PLANE KITS

BILLET'S

HOBBYCRAFT SHOP

2548 Nicollet Avenue - Minneapolis 4, Minn.

A TOOLSHOP IN YOUR HAND

**JACK OF ALL TRADES
AND MASTER OF PLENTY**

Smooth, steady power at your fingertips! Plug Handee in any AC or DC socket and you're ready to grind, drill, polish, rout, carve, sand, saw, engrave on metal, wood, plastic, horn, glass, etc. Wt. 12 oz., 25,000 r.p.m. In steel case with 40 accessories, postpaid, \$27.50. Handee only with 7 accessories, \$20.50. Satisfaction guaranteed.

Order Now! Prompt Delivery!

FREE! 52-page Manual
Chicago Wheel & Mfg. Co.
1101 Monroe St., Dept. MC
Chicago 7, Ill.

HANDEE **TOOL OF 1001 USES**

"MODELEISURE"

Here's a way you pikers can give the models back to their original owners, the kids.

Build them a realistic adult-size ride-on vehicle swing. A something new and different in play equipment. Any one set of plans \$2.00. Complete information. Manufacturers welcomed. Send no stamps.

We are busy filling mail orders. Currently popular are the Sunmer & Crosstown Trolley Cars. Others available are Caboose, Ferryboat, Streamliner, Diesel Switcher, Lunch Car, Work Car, Combine, Mail Car, Camel Back, Pullman, Observation, Red Cross Car, Space Ship, 40 and 8, Theatre Wagon, Gypsy Wagon, Landing Craft, Wessel, House Boat, Bus, Auto, Derrick.

PENDULA PRODUCTS CO.
P.O. BOX 526 WOODBURY, N. J.

**NEW! Miniature!
DUST MASK**

Wear when sanding, grinding, paint spraying, sweeping, dusting, furnace cleaning, etc. Handy as a pair of glasses. Just keep mouth closed and breathe through nose is all you do to operate. Protects against nuisance dusts, lint, coal, cement, grain dusts, HAY FEVER pollen! Weighs 1 oz. Has 9 sq. in. filter.

\$1.00 pp.

JERRY BRYANT PRODUCTS
Dept. MC, 919 N. Michigan Ave.,
Chicago 11, Ill.

THE HOBBY HOUSE, INC.
610 HURON ROAD, Cleveland 15, Ohio

Cleveland's Downtown Hobby Center

TRAINS—Varney Pacific Kit \$37.50, metal tender kit \$7.50—**PLANES**—Whirlwind Jr. Class C kit \$7.95—Speed Ambler's Dreamboat \$9.95—**RACE CARS**—McCo Hot Rod \$42.50—Invader \$42.50—Dooling \$45.00.

Mail Orders promptly filled.

FOR SALE

Several sets of new and used wheels, journal boxes and pedestals for 2 inch scale Pullman 6-wheel trucks.

for Particulars write to:
CENTERVILLE & SOUTHWESTERN RAILROAD
Roseland New Jersey

ICKEN **O GAUGE**

**Custom-Built Locomotives
Deliver Real Performance**

Send a quarter for your copy of our Miniature Locomotive Cyclopedial.

ICKEN MODEL LOCOMOTIVE CO., Inc.
Harrington Park, N. J. (Est. 1927)

6783 ITEMS **FOR THE MODEL HOBBY AND CRAFTS DEALER**
PLANES ★ TRAINS ★ BOATS

Write (on your Letterhead) for 40 page Merchandise Check Sheet.

R. L. WEBBER CO.
Wholesale Only
4024-4026 Elston Ave., Chicago 18, Ill.

BOSTON & MAINE MOGUL

(Continued from page 22)

in order to provide clearance for it, the coal pile is shaped from .010 thick sheet steel. This is easily done with a center punch. Hold the punch over the sheet steel and keep moving it around while hitting it with a hammer. Be careful not to hit it too hard or you may punch a hole through the thin sheet steel. The sheet will not be flat when you are finished, but it will be cupped to just the correct shape. Make it up oversize so that it can be trimmed to fit inside the tender body. When your coal pile is finished, solder it into the tender.

Solder $\frac{1}{32}$ " copper wire around the edge of the tender to form a beading. Grabirons on four corners of the tender are bend to shape from $\frac{1}{32}$ " brass wire and soldered into holes drilled in the tender body. All that now remains is to bend the small steps under the tender deck and solder in place.

This model is equipped with outside third rail shoes which can be purchased in a hobby store. Mount one shoe on the loco and one on the tender. The rotary type reverse switch is mounted inside the tender body on a bracket made from $\frac{1}{32}$ " sheet brass. The switch used on my model was taken from an old Lionel loco. The wiring diagram clearly shows how to hook up this type of reverse switch with the K&D motor.

The author is now busy constructing an O-gauge model of the Boston & Maine Atlantic. The Mogul will see freight service on his O-gauge pike, while the Atlantic will be used for passenger service.

INDEXING ATTACHMENT

(Continued from page 30)

groove $\frac{1}{8}$ " dia. and then space out 24 holes with dividers. A small magnifying glass will come in handy.

LOCK NUT (4)—Turn out of C.R.S. $\frac{1}{8}$ " dia. Face and drill. Bore to .924 I.D. and cut a 1"-20 thread to fit your spindle. Cut off a $\frac{1}{16}$ " piece and file or mill a $\frac{1}{8}$ " spanner slot.

DRAW BAR (5)—In order to save cutting time, this can be made in two pieces. Face one end of a $\frac{7}{8}$ " rod and turn down to $\frac{1}{16}$ " dia. for $\frac{3}{4}$ " long. Drill out $\frac{1}{2}$ " and bore $\frac{1}{16}$ " for an I.D. of $\frac{1}{32}$ ". Reverse in 3-jaw and turn other end down to .750 O.D. $\frac{1}{32}$ " for clearance in the spindle hole. Next turn back $\frac{1}{32}$ " to .764" dia. for an easy fit in the spindle end. Bore out inside of this same end to .600" dia. and screw cut 26 T.P.I. to fit your #3 S.B. collets.

PIN BLOCK (6)—Make from C.R.S. $\frac{1}{2}$ " x $\frac{3}{8}$ ", 1" long. Square off ends and drill two 8-32 bolt holes. Spot and tap the body and bolt in position, leaving about $\frac{1}{64}$ " clearance between index plate and block. As indicated on the plan, spot the index pin hole from the index plate and the finished block holes.

INDEXING PIN (7)—Before bending, turn grooves as shown. Touch O.D. with

(Continued on page 45)

MEGOW SHIP MODELS

with Carved Balsa Hulls

Each kit contains accessories costing more than the price of kit if bought separately

GS-1	Submarine	\$4.95
GS-2	Destroyer Pillsbury	\$4.95
G-4	Great Republic	2.50
G-6	Bounty	2.50
G-12	Xebec	2.50
G-13	Arabella	2.50
G-16	Seabird	2.50
G-17	Beet of Oakland	2.50
HC-1	H.M.S. Bounty	.75
HC-8	U.S.S. Niagara	.75
HC-9	H.M.S. Queen Mary	.75
HC-14	Colin Cruise	.75
HC-15	U.S.S. New York	.75
HC-16	Pensacola	.75
HC-21	Hispanola	.75

Bounty See them at your dealer's. By mail, send money order plus 10% for postage and packing.

MANUFACTURED AND DISTRIBUTED BY
OCEAN CITY NOVELTY COMPANY
14th & HAVEN AVE., OCEAN CITY, N. J.

IT'S HOLCOMB'S
for
Prompt RETURN DELIVERY
Close PERSONAL ATTENTION TO
ALL ORDERS
NATIONALLY KNOWN and
ADVERTISED LINES
**MOTORS: U CONTROLS: FREE FLIGHT-
RUBBER MODELS**
Established 1938

Member MIA WHOLESALERS
WE SHIP TO ALL STATES and TO
MANY FOREIGN COUNTRIES
Call Us, Write Us or Come in Personally
HOLCOMB GAS MODEL SUPPLY CO.
DON D. HOLCOMB
ALMA, KANSAS PHONE 24

LOBAUGH
HOLCOMB'S

**Standard of the World
in O Gauge!**

ROLLIN J. LOBAUGH
566 So. Van Ness Ave. San Francisco, Calif.

CANADIAN RAILROADERS!

Order that kit now!
Build it on your holidays.
Is your name on our mailing list?

**CANADIAN MODEL BUILDERS'
SUPPLY HOUSE**
Everything in O & HO Gauges
BOX 253 BRANTFORD, ONT.

WATCHES WANTED
BROKEN OR USABLE

All kinds. Highest Prices paid for jewelry, rings, spectacles, gold teeth, diamonds, Sterling Silver, etc. Cash mailed promptly. Write for free shipping container.

LOWE'S,
Holland Bldg., St. Louis 1, Mo.

ADRIAN'S HOBBY SHOP

Railroads—Ships—Airplanes—Race Cars
Tools—Motors—Accessories
A complete line of Hobbycraft supplies
81 North Main St. Washington, Pa.

STAMMER?

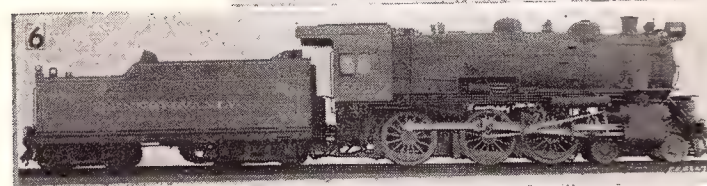
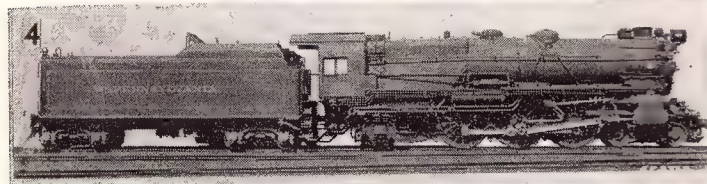
This new 128-page book, "Stammering, Its Cause and Correction," describes the Bogue Unit Method for scientific correction of stammering and stuttering—successful for 46 years. Free—no obligation.

**BENJAMIN N. BOGUE, Dept. 5429, Circle
Tower, Indianapolis 4, Ind.**

GET THIS FREE BOOK!

The Model Craftsman

PROTOTYPE QUIZ



Here are the photographs of eight different type locomotives, most of which are used by the average railroad. If you are at all familiar with locomotives, you should be able to identify most of them. One type shown here may puzzle you, known as the Shay Geared locomotive. The remainder should be easy to recognize. Try to identify them, then check your results with the correct answers, given upside down at the right.

1. 4-6-4 Hudson
2. 4-4-2 Atlantic
3. 0-6-0 Switcher
4. 4-6-2 Pacific
5. 2-6-0 Mogul
6. 4-6-0 Ten Wheeler
7. Shay Geared
8. 2-8-8-4 Articulated

ANSWERS

NEW LOCOS & CARS

For "S" Gauge

WRITE TODAY for new S2 price list just issued, containing list of all currently available "S" gauge CLEVELAND-DESIGNED kits and parts, INCLUDING

PRR SWITCHER LOCO KIT\$16.00

CGW 4-6-0 LOCO KIT 18.00
(less motor, worm and gear)

BOX CAR SIDES 25c set
Choice of 6 different road names

REEFER SIDES 35c set
6 different roads and types in color

RAIL TO MATCH AMERICAN FLYER SCALE
RAIL • TIES

Also a wide variety of rolling stock and parts.

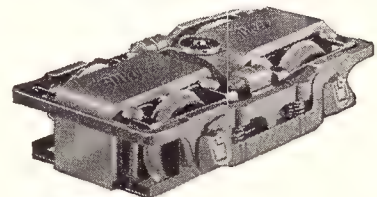
CLEVELAND

MODEL AND SUPPLY COMPANY

"Pioneer Manufacturers in S Gauge"
4513F20 LORAIN AVE. CLEVELAND, OHIO

MILLER POWER TRUCKS

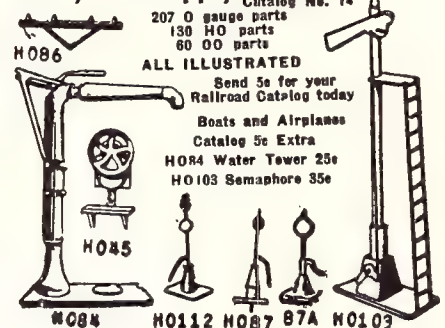
S GAUGE NOW AVAILABLE
Other gauges, other types later



S-10 Non-powered Trailer Truck..... \$5.00
S-11 Single Motor Power Truck..... \$13.75
S-12 Twin Motor Power Truck..... \$22.50
Cash with order, or see your dealer.
Fully sprung and equalized, direct drive,
coast freely, mount entirely below floor.
The ROBERT L. MILLER Laboratory
902 N. Washington St. Valparaiso, Ind.

Selley Can Supply

From Stock All
Parts Listed in
Catalog No. 14



207 0 gauge parts
130 HO parts
60 OO parts
ALL ILLUSTRATED
Send 5c for your
Railroad Catalog today
Boats and Airplanes
Catalog 5c Extra
H084 Water Tower 25c
H0103 Semaphore 35c
H084 H0112 H087 B7A H0103

SELLEY MFG. CO. 1377 Gates Ave., Dept. 606F
BROOKLYN 21, N. Y.

PLEXIGLAS

New Low Prices, new masked prime stock, clear
Thicknesses, per square foot: 1/16" @ \$1.00; 1/8" @ \$1.30; 3/16" @ \$1.60; 1/4" @ \$1.85; 5/16" @ \$2.75; 3/8" @ \$3.60; 1/2" @ \$5.50; 1" @ \$7.40. Sheet sizes 6" x 12"; 6" x 24"; 12" x 12"; 12" x 24" & 12" x 36". Add 10% for packing and postage any place U.S.A. Minimum order \$5.00. Send Money Order for prompt shipment.

PLASTIC SUPPLY CO.
2618 St. Louis Ave. St. Louis 6, Mo.

MACHINE WORK

Lathe, Milling, Drilling and Reaming. Parts finished ready for assembly or complete assemblies. Steam or Hand Pumps, Mechanical Lubricators, Pistons and Valve Gears. Special Model Machine Work. Assemblies for all Gauges Steam or Motor Driven. All work guaranteed satisfactory.

Over 30 years Machinist and Tool
Making Experience

E. J. HEACOCK
5800 SW 20th ST. CORAL GABLES 34, FLA.

MODEL RAILROAD MANUAL



Now Printing — Second Volume of **MODEL RAILROAD MANUAL**

The original volume was the "daddy" of all American Books on Model Railroading and still holds the record for volume sales and popularity. Volume II is a greatly improved book, up-to-the-minute in every detail. Illustrated is the cover of what will undoubtedly be the greatest book on Model Railroading. It is chock full of valuable reference material on Construction, Maintenance and Operation. All your problems solved in one GREAT book.

Printed on large pages, profusely illustrated and spiral bound allowing pages to lay flat. Price \$2.00 post paid.

MODEL CRAFTSMAN

RAMSEY, NEW JERSEY

INDEXING ATTACHMENT

(Continued from page 42)

$\frac{1}{16}$ " radius tool and go in .040". Check fit of drill rod in hole before bending as indicated.

FEATHER (8)—This is forced in spindle with the flats parallel to key in collet, preventing collet from turning while tightening. Make certain that it is a force fit and also that it does not protrude outside the diameter of the spindle bearing.

ASSEMBLY—Fit all pieces together with oil, using a $\frac{1}{8}$ " ball and .015 spring wire in the Pin Block. An 8-32 set screw will keep the ball on the groove seats; however, don't have it too tight so that the pin cannot be moved. The pin should slide into each groove and stop. The bent Indexing Pin can be pushed out of the way of the headstock, so that you can get quite close to end mills.—W. V. B.

ALONG THE TINPLATE TRACK

(Continued from page 25)

ever, should be certain in each case before we add their names to the ranks of tinplate manufacturers.

Now briefly for the history of some other firms that we know did make iron trains and whose names are probably familiar to readers of this department. The Kenton Hardware Co., of Kenton, Ohio, was one of the largest makers of iron trains, producing a number of large and fine models up until comparatively recent date. This firm, originally the Kenton Hardware & Mfg. Co., began making toys in the mid-1880's. Just when they introduced iron trains is not certain, but their train line seems to have been at its peak around thirty-five years ago.

In 1913, Kenton was making four sizes of cast iron trolley cars, ranging in length from 5" to 12". Possible clues for tentative identification of some Kenton iron pieces are a tender numbered "48" that went with a 4-4-0 loco, and a caboose with both center door and end platforms marked "62."

The Grey Iron Casting Co., of Mount Joy, Pa., was another important manufac-

turer of cast iron trains. From 1881 to 1913, the company was known as the Wrightsville Hardware Co., original parent companies having had their origin as far back as 1840. Considerable data on identifying Grey Iron trains was given in the March issue.

Incidentally, we have been asked on several occasions the difference between cast iron and grey iron. Upon inquiry, we were informed by a foundryman that cast iron and grey iron are the same, all cast iron being grey in color. Iron trains have been made chiefly of two kinds of iron, namely cast iron and malleable iron. The latter will bend before breaking and has been featured in a few very large and elaborate locomotives. The vast majority of iron trains, however, were made of cast iron.

The Arcade Mfg. Co., of Freeport, Ill., have manufactured some particularly interesting and unusual iron train units. Large iron working derrick and pile driver cars of thirty odd years ago were their products and were sold as separate units, not as parts of trains.

This company was established around 1880 by E. H. and Charles Morgan, originally making agricultural products and later branching out into box coffee mills. Around 1900, the first Arcade toy was made, a miniature replica of one of their box coffee mills. This particular item, which enabled the company to use up a great deal of their scrap lumber, was carried in the line for many years. As the company branched out into the manufacture of various cast iron hardware items, iron toys (a notable Arcade item) were added to their line, including their various iron train products.

One of the best known iron train manufacturers was the Hubley Mfg. Co., of Lancaster, Pa. Mention has already been made in these pages not only to their regulation style trackless pull toy and clockwork locomotives and trains, but also to their unusual cast iron elevated railroad of the 1890's.

This firm was originally known simply as The Novelty Works, but was organized under the present name by John Hubley in 1894. Requests for a better illustration of their interesting cast iron replica of an

HOLLYWOOD MODEL TREES & SHRUBS

Add more life to your piket! Natural growth from Calif. mountains, carefully processed, dyed and coated to give natural appearance. Inexpensive, long-lasting, washable. In HO, O and Extra large sizes. FREE illustrated folder shows complete line of trees and shrubs and money-saving Kits.

Sample Kit No. 320 (HO size). 42 pieces, including orange, apple, shade, tall, and pine trees, hedges, bushes, shrubs, 2 oz. jar green enamel, imitation grass, U. S. mail and storage boxes. Regular \$8.08 value, only \$5.00. Money-back guarantee.

Kit No. 330 (O size). 35 pieces. Regular \$5.94 value for \$5.00.

Your dealer can supply you, or we will ship direct, postpaid. Send check or money order. Dept. MC-6.

BERT WELCH COMPANY

128 South Hoover Street, Los Angeles 4, California

WESTBROOK

"O" Gauge

FREIGHT CAR KITS

with

SIDE PANELS PAINTED

AND LETTERED

Send for Illustrated List of Complete Kits and Hardware Parts—6c Stamps—Please

The Westbrook Company

Hasbrouck Heights, N. J.

Sand Casting - Forging - Heat Treating - Case Hardening

BRONZE FOUNDRY



INVENTORS — SCHOOLS — CRAFTSMEN use FOUNDRYETTE for making castings quickly for new inventions, for instruction, and general purpose. Three sizes available capable of making bronze castings of 1½, 3 and 6 pounds weight, aluminum, copper, brass, etc. Domestic gas supply and 110 volt AC or DC energy required for operation. Write for FREE circular and information today.

Kansas City Specialties Co., Box 6022, Dept. C-6-1, Kansas City, Mo.

GARGRAVES UNIVERSAL

O and O27 Gauge Track (Patented) SCALE, HI-IRON or TINPLATE

Make curves, etc., as you wish. NO SPIKES. NO Gauges. No special tools. Circular for stamp.

GARDNER, "THE TRAIN DOCTOR"

Lionel Factory Approved Service

2261 Dewey Avenue Rochester 13, N. Y.

CANADA'S

LARGEST AND MOST COMPLETE HOBBY SUPPLIERS

SOLE CANADIAN DISTRIBUTORS for

T 56 BROWN RUBBER

$\frac{1}{32}$ " on ½ lb. spools
 $\frac{1}{16}$ " on ½ lb. spools
 $\frac{1}{8}$ " } on 1 lb. spools
 $\frac{3}{16}$ " }
 $\frac{1}{4}$ " }

NOW AVAILABLE AT \$4.50 per pound retail. Write for 36-page illustrated catalogue of our complete Hobby item line and dealers' discounts.

Model Craft Hobbies Limited

66 Wellington St., West
TORONTO Dept. 140 CANADA

HORSELESS CARRIAGE

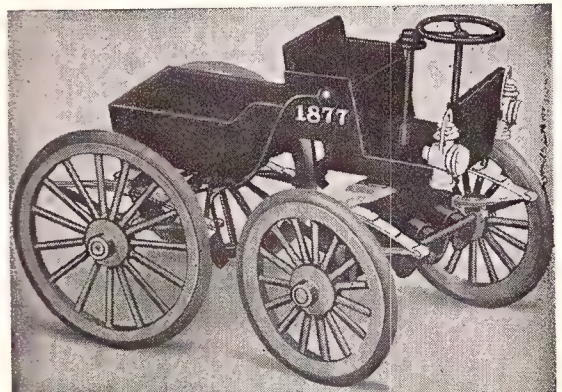
OF LATE 19th CENTURY

This ½" scale model of Selden's Horseless Carriage is the fore-runner of our modern automobile. Kit builds authentic and detailed model, including fully formed plastic spoked wheels, head lamps, and steering wheel. Die cut plastic springs and shaped wood parts included to complete historic model. A Collector's Item.

WHOLESALE ONLY

MOD AC MFG. CO.

4483 BEVERLY
LOS ANGELES 4, CALIF.



NEW BACK ISSUE RELEASE

Grouped according to leading articles for your convenience. Easy to select projects of special interest to you. 24 Hour Service on all orders.

RAILROADS—HO GAUGE

Low-Wheeled 4-6-2 Pacific	June thru Nov. '44
Semi-Diesel Railcar	Aug. '44
The "999" in HO Gauge	Sept., Oct. '44
1st Prize in HO Layout	Oct. '44
2nd Prize in HO Layout	Nov. '44
Open-End Gondola Car	Dec. '44
HO Draft Gear	Dec. '44
Three HO Layouts	Feb. '45
C & O Mountain Type Locomotive	Mar. '45
Laying Out HO Pikes	Apr. '45
0-8-0 Switcher	May '45
Cement Hopper Car	June '45
Consolidation and Tender	June, July '45
"S P" A-6 Atlantic	Aug. thru Nov. '45
Pennsy T-1 Locomotive	Sept., Oct. '45
Powerful Electric Engine GG-1	Oct., Nov. '45
6000 N.Y.C. Loco & Tender	Nov. '45
Central Vt. Loco.	Jan. '46
C & O Hopper Car	Jan. '46
Southern Pacific 4-4-0	Mar. thru June '46

O GAUGE

Motorized Wrecking Crane	Sept. '44
Mother Hubbard 4-4-2	July '46
Suburban Double Ender	Sept. '46

OO GAUGE

Six Passenger Cars	Nov. '44
War-Time Car Building, Express Reefer	Apr. '45
Double-Deck Sleepers	Apr. '45

PROTOTYPE DIMENSION PLANS

Railroad Station (Plans in HO)	July '44
Old Royal Blue Cars & Loco.	Aug. '44
Coal Breaker	Nov. '44
"Old Time" Railroad Station	Dec. '44
New Troop Kitchen Car	Feb. '45
Four Free Lance Cars	May '45
Reading Camelbacks	June '45
Burlington's "Vista-Dome" Observation Car	Nov. '45
U.P. 800 Class Loco.	Dec. '45
Erie Caboose	Jan. '46
C. & N.W. Pacific 4-6-2	Feb. '46
B. & O. Mallets	June '46
Penn E-6 Atlantic	Aug. '46
Loco Traveling Crane (all gauge)	Oct. '46

RAILROAD MISCELLANEOUS

Building Model Locomotives	Jan., Feb. '45
Laying Out HO Pikes	April, May, July, '45
A Model Saw Mill	Aug. '45
Bridge Warnings	Nov. '45
HO Trestle	Dec. '45
Simple Crossing Gate	Dec. '45
Standard Brick Signal Tower	Jan. '46
How to Build Tunnels	Feb. '46
Bridges	Mar. '46
HO Coal Tipple	Apr. '46
A Terminal Throat	May '46
A Big Interurban Layout	June '46
V & T Passenger Station	July '46
Track & Scenery Foundation	Aug. '46
Three-Way Switch	Aug. '46
A Simple Interlocking Plant	Sept., Oct. '46
B. & O. Coal Tower	Sept. '46
Speaking of Water Falls	Oct. '46
Does Your Layout Have a Church?	Oct. '46

TROLLEYS

Model Cattle Car (Prototype Dimensions)	July '44
Shooting Trouble on HO Motor Trucks	Oct. '44
Trolley Wirework	Nov. '44
Interurban Depot & Substation	Feb. '45
Hudson & Manhattan Tube Cars	Mar. '45
Interurban Mail	Apr. '45
"Open Air" Elevated Railways	June '45
Yards, Barns & Terminals	July '45
Trolley Work Cars	Aug. '45
Trolley Snow Plows	Nov. '45
Trolley Front Ends	Dec. '45
Trolley Freight Service	Jan., Feb. '46

Power for Your Trolley	Mar. '46
Double Cab Work Car	Apr. '46
Pacific Electric Car (O Gauge)	May '46

LIVE STEAM

Valve Gears, Gear Frames & Boiler Saddles (3/4" sc.)	July '44
Boiler Injector & Lubricator (1/2" sc.)	Aug. '44
Engine Pilot, Pilot Beam, Water Gauge (3/2" sc.)	Sept. '44
Single Cylinder, Steam-driven Feed-Water Pump (3/2" sc.)	Oct. '44
Home-Made Cylinder Cocks (1/2" sc.)	Oct. '44
Atlantic Live Steamer, 3/4" scale	Nov., Dec. '44, Jan., Feb., Mar., May, June, July '45
1/2 H. P. Horizontal Steam Engine	Feb., Mar., May '45
Boiler Feed-Water Pump (1/2" sc.)	Feb. '45
Advantages of Inch Scale	Mar. '45
Cab, Coupler, Drawbar Pocket, Bell, Dome (1/2" sc.)	Apr. '45
Boiler Construction Hints	May '45
Assembly & Connections (1/2" sc.)	June '45
Steam Driven Water Pump	Oct., Dec. '45, Feb. '46
Stationary Steam Engine	July thru Oct. '46

TINPLATE & SCALE CONVERSION

Hi-Rail-Cantilever & Steel Arch Bridges	July '44
Suspension Bridges	Aug. '44
Adding Human Interest to Your Layout	Sept. '44
Wherefore "Hi-Rail"?	Oct. '44
Flag Stops	Nov. '44
"Combination" Stations	Feb. '45
Smooth Scaling	Mar. '45
Car Kinks	May '45
Improved Tin Type Trucks	July '45
Realistic Tinplate Cars	Dec. '45, Jan. '46
Tin-Types "Trued to Life"	June '45
Along the Tinplate Track	Monthly Feature

AIRPLANES

"Tiger Meat" Class C Guide Liner (Millet & DeBolt)	Oct. '45
Dizzy "B", U Control (Greene)	Nov. '45
"Butch", Class C Guide Liner (DeBolt)	Dec. '45
"Moldy Molecule", Class B & C Guide Liner (DeBolt & Thomasian)	Jan. '46
"Super Bat", New Design (Shulman)	Apr. '46
"Thunderwin", U Control (McElwee)	May '46
The "Atomic", U Control (Shulman)	June '46
"Pigmy", Free Flight Class A (Marinelli)	July '46
"Pirate", Control Liner (McGovern)	Sept. '46
"Anzac", Class C Free Flight (McCullough)	Oct. '46
Your Engines (Class A & B Survey)	Aug. '46
Your Engines (Class C Survey)	Sept. '46
Engine Maintenance & Operation	Sept. '46
Folding Props (Thomas)	Oct. '46

ELECTRICAL ARTICLES

Home-Made Telephone	July, Aug. '44
Battery Charging Hints	Aug. '44
Switch Motors from Doorbells	Oct. '44
Polarity Indicator	Oct. '44
A. C. Power Supply	Nov. '44
Radio Control for Model Layouts	Dec. '44
Crossing Gates, Electrically Controlled	Dec. '44
Wind Your Own Magnets	Dec. '44
Home-Made Rheostats	Dec. '44
"Per-Mag" Switch Machine	June '45
O Gauge Motors	Aug. '45
Universal Wiring Circuit	Oct. thru Dec. '45
Train Control Rheostat	Apr. '46
Lighting Your Trains & Buildings	June '46
	May '46

RACE CARS

Molding Car Bodies	July '44
Getting Ready for Racing	Mar. '45
Building a Model Race Car	May thru Nov. '45
How to Get More Speed	May '45
Trouble Shooting	Feb. '46
What Type Racing Car?	Mar. '46
Test Car #1	Apr. '46
Test Car #2	July '46
Rail Track Construction	May '46
Cable Track Construction	June '46

BOATS

Magneto for Boat Engines	July '44
"Misfily", Prize-Winning Model Speed Boat	May '46

MODEL CRAFTSMAN

Dept. B1-647, Ramsey, N. J.

All 1944, 30¢ each; 1945, 1946, 25¢ each.

Gentlemen:

Please ship me the following numbers of MODEL CRAFTSMAN immediately:

I enclose my check ☐ ; money order ☐ ; in payment. (Add 5c to checks.)

Name

Street

City

old Pennsylvania 4-4-0 locomotive than was printed in the March issue have led us to picture another set with the same locomotive this month. This model has the typical Pennsy firebox and is, we believe, a fairly accurate replica of its prototype, probably the best tinplate representation of any Pennsylvania steam type locomotive manufactured up until the last few years.

The Wilkins Toy Co., and the Kingsbury Mfg. Co., both of Keene, N. H., must be mentioned together, for the latter is a continuation of the former. The company began making toys in the late 1880's as the Wilkins Toy Co., and was purchased by H. T. Kingsbury in 1894, although the name was not changed for some years. The Wilkins $\frac{3}{8}$ " scale 4-4-0 iron locomotive of the 1880's and 1890's is truly a tinplate "classic" and one of the individually outstanding tinplate locomotives of all time. Later, however, the Wilkins cast iron trains decreased greatly in size and the designs were simplified. Stamped metal cars were frequently sold in sets with iron locomotives. In the 1920's and early 1930's, Kingsbury manufactured trackless clockwork four and eight wheel street cars of stamped steel.

The Kingsbury trains with iron locomotives and stamped cars were carried over through most of the 1920's. In the last part of that decade, a trackless clockwork train was manufactured, then introduced and featured as "A novel new train which does not require a track; it runs

on the floor anywhere." The locomotive wheels had rims of rubber vulcanized on for traction and quiet running. It would run 100 feet at one winding. Kingsbury also manufactured a small locomotive at the end of a stick, designed to be pushed along the floor by a child.

Other manufacturers of iron trains, and particularly the interesting and important old firm of Wm. Shimer, Son & Co., will be discussed in detail at some future date. Shimer, in particular, would seem to merit an article devoted entirely to their history and products, and research toward this end is now being conducted. It is possible at that time we will also have further information on Dent and some other little known iron train makers of Pennsylvania.

TROLLEY CARS

WHENEVER Tinplaters have tried to urge the production of a trolley car onto manufacturers, they have been told, among other things, trolley cars are becoming so scarce in actual life today that many boys are growing up supposedly without even knowing what a trolley looks like. Production in tinplate could not be practical as too few could be sold strictly as toys to be profitable. This has never seemed a particularly valid argument; for years electric type locomotives were sold all over the country, in sections where real electric trains were unknown.

Apparently there are those in the toy business who do not consider this a valid



Get this new book packed with good dope. Ask your dealer about

VARNEY

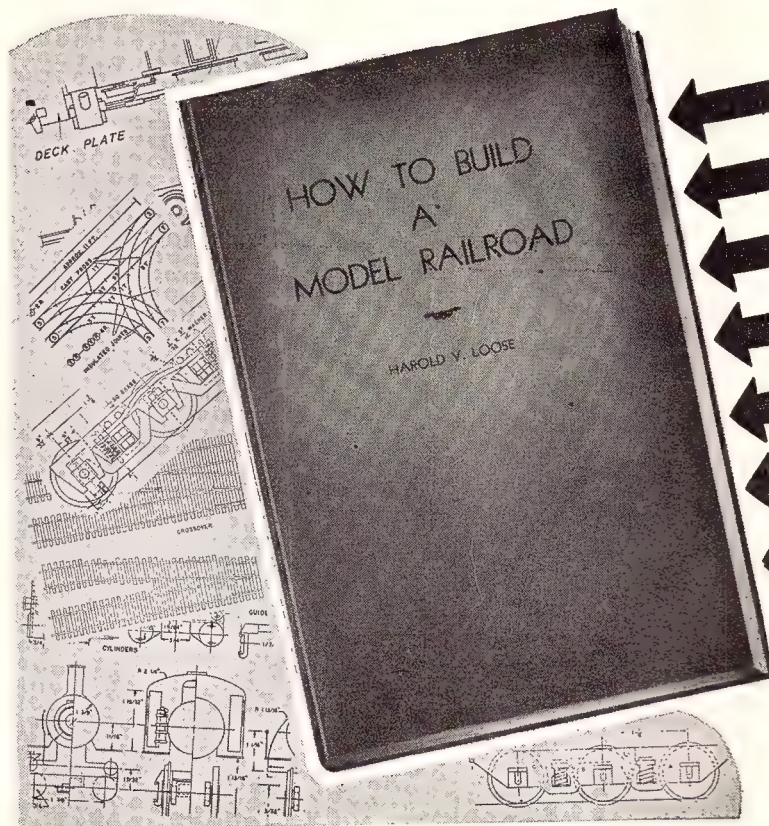
BRASS for Home Work Shops



Free Cutting Brass Rods—Rtd., Sq., Hex., $\frac{1}{2}$ -Oval
 Naval Brass Rods—Round and Hexagon
 Brass and Copper Tubing... Brass Sheet
 Send for Complete Price List No. 104
MEIER BRASS & COPPER CO.
 1155 Bellevue, Detroit 7, Mich.

HOW TO BUILD A MODEL RAILROAD

A MUST FOR BEGINNERS—A REFERENCE BOOK FOR VETERANS



- CHECK THESE FEATURES**
- GETTING STARTED**—A complete, practical explanation of Model Railroading.
 - TRACK LAYOUTS**—A study of Track Design covering the smallest to the largest layouts.
 - TRACK LAYING**, the know-how of laying track, short cuts and correct methods.
 - POWER SUPPLY & CONTROL**, a knotty problem, explained in simple language.
 - LOCOMOTIVES**, classification, best construction methods and detailed plans.
 - CAR CONSTRUCTION**, a thorough treatise on how-to-build both freight and pass. cars.
 - SCENIC ACCESSORIES**—How-to-build practical scenery, right-of-way equipment, etc.

This new edition of **HOW TO BUILD A MODEL RAILROAD** has been **COMPLETELY** revised right up to present day standards. It has many new plans and illustrations (more than 75 included.) The spiral binding permits pages to lie flat for convenience while working. New editions now ready, price \$2.00 post paid.

MODEL CRAFTSMAN **RAMSEY, NEW JERSEY**

ATOMIC SPEED BOAT



SOUNDS LIKE A REAL SPEEDBOAT

One of the novelty sensations of the atomic age. Beautifully enameled in bright, durable colors. Runs half an hour on a small piece of fuel. Fuel included. **FREE!** Sounds like a roaring 2-cylinder speedboat. Simple to operate. Hours of fun for all adults and children. A wonderful gift idea. Order several. Fully guaranteed.

\$1 Complete Postpaid

Mail Orders Direct to
L. C. J. SALES CO., Dept. MC
2625 LUCAS AVE. ST. LOUIS, MO.

All Metal No Moving Parts

Fuel Supply Included Free

No Springs or Gears to Break

POWER PLUS WET CELLS

For EVERY MODEL SPORT

PLANES—RACE CARS—BOATS TRAINS

SEE THE NEW "PROTO" 4.4 VOLT RACE CAR BATTERY AT YOUR DEALERS

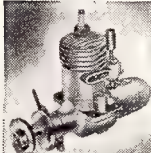
Absolutely

NON-SPILL!

\$5.50

Power Plus Wet Cell Co.
2345 W. WASHINGTON BLVD.
LOS ANGELES 7, CALIF.

New THOR "B" ENGINE—\$6.95



The new THOR "B"—Sensational miniature gasoline engine that **REALLY** works. Super-power performance; over 20,000 already sold. 1/8 H.P. Complete with coil and condenser, only \$9.95. In KIT form, fully machined, 5 minutes to assemble \$6.95, without coil and condenser. Powers all models; fully illustrated instructions. Send \$1.00—shipped collect same day C.O.D. **FREE**—Send for big 32-page illustrated Catalog showing hundreds of hobby items.

America's Hobby Center, 156 W. 22 St., Dp. K-67, N. Y. 11

SPECIAL CASTOLITE KIT

Hobbyists, craftsmen: Get new CASTO-KIT to make useful objects with CASTOLITE, "magic" liquid casting plastic. Make beautiful articles very first day—lamp bases, bookends, novelty jewelry. Also embed flowers, butterflies, photos, coins. Carve, saw or drill. Kit includes 1 lb. CASTOLITE, hardener, buffing compound, measuring dropper, abrasives, molding vial, flowers for embedding. Instruction Manual. Send \$3.35 for kit, prepaid or order C.O.D. Illustrated Manual alone is 25c. The CASTOLITE COMPANY, Dept. E7, Box 211, Kenilworth, Ill.

NEW Liquid Plastic

20-Project KIT \$3.35

thesis either. The Noma Electric Corporation, who in the past few years have become one of the largest toy manufacturers in the United States, have just introduced a wooden take-apart pull toy trolley car! This trolley, being a very simple representation for young children, is unsuited for conversion or other model railroad use. We simply cite it here as a comment on the idea that a trolley car cannot be sold today because children are not familiar with a trolley car. *Tin-platers would still like a trolley!*

R. R. CLUB NEWS

(Continued from page 6)

roughly ten bucks! And brother, take into consideration the fellow with several huskies on his road—where will he fit into the picture? *And all of this comment just because some one advocated a changeover from third-rail to two-rail!*

EASTBAY PREPARES FOR COVENTION

ACCORDING to Jack Collier, "Boss Man" of the Eastbay Society of Model Engineers, his gang is hard at work and doing a bang-up job to make a real success of the coming NMRA Convention.

While still subject to change, the schedule of events is roughly as follows: Thursday and Friday, August 14th and 15th, are Registration days. Saturday, August 16th, both the morning and afternoon will be given over to a tour of the Bay Cities, a real treat for the visiting rail fans. Saturday evening is the Banquet from 7 to 9 P. M. At 10 P. M., everybody will board a SP ferry boat for a tour of San Francisco Bay at its best. The hosts expect to have entertainment and refreshments aboard to further this event.

The following day, Sunday, August 17th, is Meeting Day, with a break in the middle for a barbecue. The Convention terminates with the close of this meeting. As Jack puts it, "*Short and sweet, but packed with activity!*"

The membership will then go on to Southern California, stopping at Santa Barbara for a short time and then into Los Angeles where the "southern gang" will carry on.

BAKER VALVE GEAR

(Continued from page 21)

use today, we choose the Baker Valve Gear as a start, giving photos and drawings to best illustrate this detail. Notice the photos of the model which show how the actual gear is modified to suit the model builder. The moving parts are there to please the eye, yet little has been taken away from the true "motion" to cause the imagination to work overtime.

The Baker Valve Gear is an outside gear, taking its motion from an eccentric crank attached to the main crank pin and from the main crosshead. It does not use the link and block common to other gears. The unit consists of an eccentric crank and rod, valve gear frame (con-

tains reverse yoke, radius bars, bell crank and gear connecting rod) valve rod, combination lever and union link, plus the customary arrangement of reach rods, reversing shaft, reverse lever, etc.

OPERATION OF THE GEAR:

As the wheel is rotated, the eccentric rod is moved, carrying with it the gear connecting rod to which it is coupled. This produces a movement of the radius bars also away from the cylinder which in turn sets up a lifting action on the horizontal arm of the bell crank, thus moving the valve backward. As the wheel continues to move the connecting rod and radius bars, a downward movement of the arm of the bell crank is started, thus moving the valve in the opposite direction. From this description, you will note that the Baker Valve Gear when used for inside admission valves, is in what is known as *direct forward motion*. In other words, the valve moves in the same direction as the eccentric rod when set for forward motion.

BACKWARD MOTION: The reversing of the Baker Valve Gear is accomplished by bringing the radius bar bearings in the reverse yoke past the central position, away from the bell crank. The effect of this is to change the arc of the radius bars. Movement of the eccentric away from the cylinder produces a downward (*instead of an upward movement, as in forward gear for the same movement of the eccentric*) action on the upper arm of the bell crank, causing the valve to come forward.

This is just the opposite to the effect of this eccentric rod movement with the reverse yoke in forward motion. That is, the valve moves in a direction opposite to the direction of the movement of the eccentric rod. The gear is therefore said to be *indirect* in reverse motion.

COMPLETE RAILROADERS SOUND EFFECTS SYSTEM

- Model Railroaders Phonograph
- Senco "Sound Tender" Units and Kits
- Real Sound Effects Record

See your Dealer or Write for Catalogue.

SENCO SOUND, INC.

P. O. Box 5055, Pittsburgh 6, Pa.

RACE CAR OWNERS

Liberal Trade in for your old Race Car or Engine, Regardless of condition, on any new Race Car on the Market. (McCoy, Melcraft, Dooling, Pacemaker, etc.) Send your old car now for a free appraisal, car returned immediately if offer is unsatisfactory.

NEW AND USED RACE CARS

and PARTS FOR SALE

WILLIAM E. MOSES

2015 Military Street Port Huron, Michigan

TRANSPARENT UTILITY BOXES

for small tool stock, as display and fishing tackle boxes, light, durable



No. 23, SEE PHOTO
4" x 3" x 1", 6 compt. \$0.95 ea.
No. 20, 6" x 3 1/2" x 1", 8 compt. \$1.10 ea.
No. 45, 5 1/2" x 4 1/4" x 1 1/4", 4 long compt. \$1.50 ea.
No. 45D, same size, 2 long & 8 small compt. \$1.50 ea.
No. 26A, 8 1/4" x 4 1/4" x 1 1/4", 18 compt. \$2.20 ea.
No. 144, 4 1/2" x 1 1/2", 6 compt. round. \$1.30 ea.
ASK YOUR DEALER OR WE WILL SHIP DIRECTLY, postpaid. Send check or money order. Dealers ask for discount.

STANLEY A. EDWARDS CO.
277 BROADWAY, NEW YORK 7, N. Y.

RETAIL DEALERS DIRECTORY

ALABAMA

ROY'S HOBBYLAND
Airplanes, Boats, Railroads, Racecars
Lionel Service—Other Hobbies
67 S. Jackson St. Mobile 15

CALIFORNIA

RAY'S HOBBY MODEL SUPPLIES
Complete Stock of Model Supplies
Railroads—Airplanes—Ships
1222 American Ave. Long Beach 2

COLONEL BOB'S
WORTH A VISIT!!
Daily & Sundays!! Nicely Stocked!!
3707 1/2 W. Pico Blvd. Los Angeles 6

PICO MODEL AIRPLANE CO.
All Nationally Advertised Boats
Airplanes—Railroads (HO—O)
2580 W. Pico Blvd. Los Angeles 6

TROXEL BROS. MODELS
Railroads (all gauges), Machine Work
Railroad Repair Service
202 S. Western Ave., Los Angeles 4

JACK COLLIER'S "Toys for Men"
Lionel Electric Trains, Accessories
Racecars, Motors & Repairs
3669 Grand Ave. Oakland 12

HECKMAN'S HOBBY SHOP
Model Trains, Scale—Tinplate
All Gauges—Small Tools
249 1/2 E. Base Line, San Bernardino

MISSION HOBBY SHOP
The only 100% HOBBY SHOP
In San Francisco
3247 24th St. San Francisco

BRADFORD'S HOBBY & PAINT SHOP
Complete Stock for Hobbyists
Models—Boats—Airplanes—Motors
408 W. Sixth San Pedro

COLORADO

FISHER LIONEL SERVICE
Trains—Planes—Ships—Motors
Accessories—Approved Lionel Service
2322 E. Colfax Ave. Denver 6

CONNECTICUT

PARMELE & STURGES
All Reliable Lines
Open 8 to 6—Fridays 'till 9
51 Crown St. New Haven

GEORGIA

ATLANTA HOBBY SHOP
All Leading Lines—Airplanes
Race Cars—Railroads—Supplies
604 Peachtree St. Atlanta

ILLINOIS

AIRPLANE SUPPLY SHOP
"Model Builders' Haven"
Railroads—Airplanes—Boats—Race Cars
2210 So. Lombard Berwyn

ALL-NATION HOBBY SHOP
Model Trains—Ships—Planes—Supplies
Chicago's GREATEST Stock
157 W. Lake St. Chicago 1

BEN'S HOBBY SHOP
In the HEART of the Loop
Railroads—Ships—Planes
72 W. Washington St. Chicago 2

SIMONSEN MODEL SUPPLIES
Available Items for ALL Models
Trains—Planes—Boats
3054 N. Greenview Chicago 13

TROST MODEL AIRPLANE SHOP
Railroads (all gauges) Boats
Airplanes Kits Racecars Accessories
3111 W. 63rd St. Chicago

This section is intended for the convenience of readers who wish to trade with their local dealer. Patronize him! Help him to be of more service to you. Please mention Model Craftsman when purchasing.

UPTOWN HOBBY SHOP
Complete Stock Supplies—Boats
Railroads Airplanes Race Cars
4508 Broadway Chicago 40

INDIANA

HOBBY CENTER
All Reliable Lines—Planes
Racecars—Boats—HO Specialists
Wm. H. Block Co. Indianapolis 9

IOWA

THE HOBBY SHOP
Railway Supplies—O—OO—HO
Boats Airplanes Accessories
215 E. Third St. Davenport

KANSAS

SEARLE MODEL SHOP
HO Gauge Trains and Accessories
Planes—Motors—Boats
420 Locust St. Topeka

KENTUCKY

FISCHER'S HOBBY SERVICE
Airplanes—Boats—Cars
TT—HO—OO—S—O Railroads
618 S. 4th St. Louisville

MASSACHUSETTS

BOSTON MODEL R.R. CO.
Hobby Headquarters—Lionel Service
Railroad Kits Boats Airplanes
665 Atlantic Ave. Boston

MICHIGAN

DUNN'S HOBBY ARCADE
Railroads—All Gauges—Boats
Planes—Racecars—Delta Tools
738 S. Washington Royal Oak

MINNESOTA

BROWN'S HOBBYCRAFT SHOP
Model Airplanes—Gas Engines
Race Cars Railroads
13 S. 5th St. Minneapolis 2

MISSOURI

ROCKHILL GARAGE, Hobby Dept.
Race Cars Sales & Service
Parts Motors Neoprene Tubing
4815 Locust St. Kansas City 4

SWIFT MODEL SHOP

All Lines—Race Cars
Airplanes—Railroads (all gauges)
5117 Delmar Blvd. St. Louis 8

NEW JERSEY

DELANY MODEL R. R. SHOP
Railroad Supplies—All gauges
Planes Boats Motors Supplies
38 Union Place Bloomfield

"Jack's" Hobby and Craft House
Bloomfield's COMPLETE Hobby Shop
"The One-stop Place"
735 Bloomfield Ave. Bloomfield

MODEL RAILROAD SHOP
Model Railroads EXCLUSIVELY
since 1932
Kits Supplies Accessories
292 Vail Ave. Dunellen 8

HOBBY LAND

Complete line Railroad Supplies
Racecars Boats Motors Accessories
390 Main St. Hackensack

ACE MODEL HOBBY SHOP
Railroads—Scenery—Race Cars
Airplanes—Ships—Tools—Accessories
57 Monitor St. Jersey City

CENTRAL JERSEY MODELS
Kits and Supplies for Railroads
Boats and Airplanes
Cor. North & Lenox Aves., Westfield

NEW YORK

HOWARD E. RUTH MODELS CO.
Complete Stock—Model Airplanes
Boats—Trains—Racecars—Supplies
1466 Genesee St. Buffalo 11

MODEL R.R. EQUIPMENT CORP.
Manhattan's Most Unique Hobby Store
Trains Boats Accessories
21 West 45th New York 19

TRYMO HOBBYCRAFT SUPPLY
New York's Largest Hobby Store
Railroads Boats Airplanes Racecars
81 Chambers St. New York 7

TEX FOSTER

Railroad Kits & Supplies
Model Planes—Boats—Archery
105-14 Jamaica Ave. Richmond Hill 18

CRAFT SERVICE

"Everything the Craftsman Wants"
Models, Plastics, Leathers, Tools
337 University Ave. Rochester 7

ED GUTH HOBBIES

Trains—Tools—Ships—Crafts
Airplanes—Engines—Race Cars
132 E. Genesee St. Syracuse 2

OHIO

THE HOBBY HOUSE, INC.
Downtown Headquarters—Trains—Planes
Boats—Cars—Tools—Accessories
610 Huron Road Cleveland 15

HOBBY MART
Railroads—Boats—Airplanes—Tools
Electric Trains Cameras Supplies
73 E. Gay St. Columbus

GOODS HOBBY SHOP
Neoprene Tubing, ALL Sizes
Replacement Parts for Everything
1729 N. Main St. Dayton 5

HINES' HOBBY HOUSE
Ohio's LARGEST Hobby Store
Airplanes—Boats—Racecars—Railroads
621 Madison Ave. Toledo 4

OKLAHOMA

L. R. BABB MODEL and TOY SHOP
The complete Model Builders Store
Engines Repaired Trains
305 E. 4th St. Tulsa 3

OREGON

SIMS BROS. CYCLE & REPAIR SHOP
Model Airplane Kits, Supplies
Popular Engines—Plastics—Bicycles
23 N. Fir Medford

ROSE CITY HOBBY DEN
Railroads—Planes—Cars—Motors
Ships—Accessories—Tools—Periodicals
5820 NE Sandy Blvd. Portland 13

VIC'S HOBBY SUPPLY
Headquarters for Modelcraft Supplies
Trains—Planes—Boats—Racecars
3061 NE Sandy Blvd. Portland

PENNSYLVANIA

HOBBY HANGOUT
Planes—Trains—Racecars—Boats
"Everything for the Hobbyist"
509 Northampton St. Easton

AL BRACKIN'S HOBBY SHOP
Craftwork Model Railroads
Ship and Plane Models
743 E. Allegheny Ave. Philadelphia 34

ELECTRONIC and HOBBYCRAFT STORES
Our stock WILL AMAZE you!
324 W. Chelten Ave. Philadelphia 44
5101 N. Broad St. Philadelphia 41

"Les" Myers
MODEL MART HOBBIES
Daily 'till 6
Wednesday 'till 8
40 S. 16th St. Philadelphia 2

FLINN'S MODEL HOBBIES
Complete Modelcraft &
Supplies
909 Liberty Ave. Pittsburgh 22

LARRY'S HOBBY SHOP
Airplanes Ships Railroads Supplies
HO, O and Tinplate
1826 Brownsville Rd. Carriek, Pittsburgh

SCRANTON HOBBY CENTER
Trains—Airplanes—Racecars—Boats
Accessories Trade-ins accepted
315 Adams Ave. Scranton 10

RHODE ISLAND

THE TRAIN SHOP
Walter E. Hoxie
Approved Lionel Service—Gargaves
Trains—Ships—Planes Fridays to 11
112 Broad Street Providence 3

TEXAS

HALL'S HOBBY HOUSE
Complete Model Supplies—Racecars
Trains Planes Boats Accessories
4823 Bryan at Fitzburgh Dallas 4

WASHINGTON

THE MODERN HOME STORE
Nationally Advertised Items—Trains,
Planes, Cars, Motors, Accessories
2515 Burwell Bremerton

CANADA

RILEY HOBBY SERVICE
All Reliable Brands—Trains,
Boats, Planes, Crafts, Archery
755 King St. E. Hamilton, Ont.
ST. JOHN HOBBYCRAFT SUPPLIES
Railroads (HO), Airplanes, Ships,
Racecars, Boats, Motors, Accessories
646 1/2 Portage Ave. Winnipeg, Man.
Phone 33 765



"HO" WRECKING CRANE
COMPLETE WITH TRUCKS
\$2.00 At your dealers—By mail
add 15c for postage.



\$1.75 PERE MARQUETTE CABOOSE
At your dealers—By mail
add 15c for postage.

ALL IDEAL
KITS CONTAIN
COMPLETELY
ASSEMBLED
BRASS-
WHEEL
TRUCKS

SEND FOR OUR CATALOGUE 10c

IDEAL MODELS
19-21 West 18th St. New York 11, N. Y.

**OTHER "HO" RR CAR KITS
BOX CARS**

Pittsburgh & Lake Erie
Norfolk & Western
Northampton & Bath
Pere Marquette
Bessemer & Lake Erie
Baltimore & Ohio
Pennsylvania Auto Car

REFRIGERATOR CARS

Morrell
Kings
St. Louis

\$1.75 each at your dealers—
by mail add 15c for postage

OWN A DREMEL MOTO-TOOL...THE "POCKET-SIZE" MACHINE SHOP

"Man, what a powerhouse!" A tool that packs years of pleasure... holds promise of endless creative hours. Dremel Moto-Tool is used by the armed forces... by General Electric, Westinghouse, Remington Arms, Ford, etc.

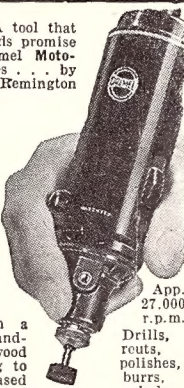
MOTO-TOOL FEATURES

Oil-less (sealed) bearings; Patented automatic chuck lock pin; Over-size armature shaft, hardened, ground, polished; 110 Volt, AC-DC motor; Sliding snap-type switch; Cord protector; Shock-proof bakelite housing; Dust-filtered, air-cooling system; Weighs only 13 Oz.; Dynamically balanced for vibrationless operation.

MONEY-BACK GUARANTEE

You'll get a real thrill with a Model 2 Moto-Tool Kit, in its handsome felt-lined, highly polished wood case with 23 accessories begging to be put to work. \$23.50. (Purchased separately the parts would cost \$30.00.) Moto-Tool only, \$16.50. Buy Dremel products from your dealer. If he cannot supply you, order from factory on 10 day trial. Sent postpaid for cash; or send only \$2.00, shipment will be made C.O.D. for balance plus postage.

DREMEL MFG. CO., Dept. T327-F RACINE, WIS.



App. 27,000 r.p.m.
Drills, reuts, polishes, burrs, grinds, engraves, carves, cuts, etc.

PASSENGER CARRYING LIVE STEAM LOCOMOTIVES

1947 CATALOG

ALL CASTINGS AND RAIL for 3/4", 1/2" and 1/4" (O gauge) STEAM LOCOMOTIVES, and all parts for their construction, are now available. DRAWINGS AND WRITTEN INSTRUCTIONS by MARTIN S. LEWIS (using his original "Step-by-Step" method of construction) available as follows (in Bound Form):
3/4" scale, classes 4-6-4 & 4-8-4.....\$3.00
1/2" scale, classes 4-6-2 & 4-8-2.....3.00
1/4" (O gauge) classes 4-6-4 & 4-8-4.....3.00
NEW CATALOG listing CASTINGS and all parts for the steam driven pumps, BOILER FITTINGS, Bolts, Nuts, Taps, Dies, Drills, Tools and ALL NEEDS FOR MODEL BUILDERS. Send 25c for your copy.

LITTLE ENGINES

BOX 15A WILMINGTON, CALIF.

HO — MIDLIN — OO

Join the Many fans who say
"For the best in HO-OO Right-of-Way"

"MAKE MINE MIDLIN."

Midlin Models Scotch Plains, N. J.

TINY POWER

MINIATURE LIVE STEAM LOCOMOTIVES

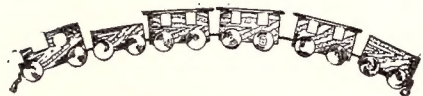
Built to order in 3/4" - 1 1/2" scale
(We do not work on smaller than 3/4" scale)
Also 2 ton Atlantics—16" track for amusement park work.

Send 2 dimes for our literature
Custom machinists for the live steam modeler
22 years' experience

CHAS. V. ARNOLD

PHILOMATH, OREGON

ATTENTION RAIL FANS!!



Something for your wife or sweetheart. Make her a Railroader. Give her the new train bracelet made of natural good quality wood with gleaming plastic wheels. A link chain connects them. Get one now at low cost. (money back guarantee) Only \$2.00 plus 40c tax. Post Paid \$2.40.

CERCO PRODUCTS COMPANY
127 Parkwood Ave. Kenmore 17, N. Y.

FLYWHEEL BOILER FEED PUMP

(Continued from page 31)

Drill through to meet the other side with a 3/16" hole, and "flat-bottom" the larger hole for the spring seat.

Chuck the piece by the sides and ends, protecting the seat with a piece of sheet lead, setting the square center portion true. Face off, center and drill 7/16" to take the water cylinder shoulder. If no mistakes have been made, you still have enough cast brass left to make the valve chest for the steam end. Just face off and turn a 1/16" shoulder to fit the cylinder. Part off 3/4" long. Mark out the center of the crankshaft, and set this running true with the faced side square to the chuck face. Center, and drill 2 3/4", reaming to 3/8". Lay off the two parts connecting to the cylinder and drill them 7/64" to enter the shaft hole radially. Drill down from the top to the center for the exhaust hole, and up from the bottom on the other side for the steam hole. These holes should be 7/64" diameter, tapped 3/8" x 40 for the pipes. To make the pipes stronger, flange them. The holding-down screw (No. 6) plugs the steam hole at the bottom.

Tin the cylinder end and valve chest on the pump and sweat them together. Running on saturated steam, this will prove sufficient, although four No. 4 screws may be used. Turn a mandrel to make a tight fit in the shaft hole and face the ends of the chest. This will also burnish off any burrs from the port drilling.

The flywheels should be made now, so the valve can be completed and timed by air before adding the piston. These are 2 1/4" diameter by 1/2" face (steel) polished on the rim and edges. Drill and ream 3/8"; don't permit the reamer to go entirely through. They will then be a push fit on the shaft and require no further keying. The crankpin holes are drilled in a jig to get both even. This is simply a disc turned with a shoulder or boss to fit the flywheel hole and a 7/64" hole drilled 3/8" out from the center. Set this in the flywheel and drill through the jig. Tap 1/8" x 40, and screw in 1/8" diameter steel crankpins, leaving 5/16" projecting. Fit a small washer around the pin to form a hub for the connecting rod, and sweat into place.

(Continued next month)

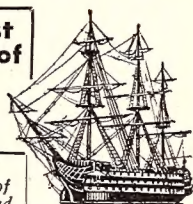
ROCHESTER ELECTS NEW OFFICERS

THE Rochester M. R. C. A. elected their annual officers for the year as follows: Ray DuColon, President; J. Locke, Treasurer; Edward Brown, Secretary.

The Club looks forward to a most active season. A six foot cyclone fence is being erected as well as a timer house which will be equipped with electric timer. A one h.p. motor will be used for starting the cars.

The boys will welcome inquiries regarding meets with other Clubs and individuals in their area. New members are cordially welcome and should contact the Secretary at 432 Pullman Ave., Rochester, N. Y.

The world's most complete range of ship and other model plans and plan books



HISTORICAL, WAR & MERCHANT SHIPS, STRANGE RIGS, etc. AIRCRAFT, RAILWAYS, AUTOMOBILES, HOUSES, etc., etc.

25c brings your copy of the Modelcraft Magazine and List. Over 300 items listed. News of the modelmaking fraternity in Britain. Ideas, hints, historical notes. A new outlook on the craft. Send the money in any way but stamps, a dollar bill for a year's subscription.

Modelcraft Ltd., 77(x) Grosvenor Rd London, S.W.1

Classified Advertisements

Classified Advertisements may be placed at the rate of 19c a word; minimum 10 words, payable in advance. Name and address must be included in count. Forms for the July issue close June 10. Send advertisement to:

THE MODEL CRAFTSMAN
Classified Department
Ramsey, New Jersey

MODELS & SUPPLIES

FOR SALE—Brand new 3/4 scale model live steam locomotive. Hudson Type. Worth \$1500, will take \$600 to settle estate. Photos and details on request.—J. L. Stevens, P.O. Box 1771, Tampa, Fla. (Night Phone H 26764)

Booster Batteries 6 Volt Wet Cell 3 1/2" x 1 1/4" x 2 1/4". Price \$2.45 W. Snow, 1439 Glynn, Detroit 6, Mich.

TOY TRAINS made before 1925. Dr. Kowal, 1846 Cullerton, Chicago.

48 LARGE SIZE PLANS for building a variety of Railroad equipment. Model Railroad Plan Package—\$1.00 pp. Model Craftsman, Ramsey, N. J.

BROKEN JEWELRY

10-LBS. JEWELRY... \$20. Mostly broken. Some perfect pieces. Send order today. B. LOWE, Holland Building, St. Louis 1, Mo., Dept. M.C.

JEWELRY stones removed from rings, etc. 100 assorted \$2.40. 50 large ones \$2.40. B. LOWE, Holland Building, St. Louis 1, Mo. Dept. M.C.

WATCHES — BROKEN OR USABLE. All kinds. Highest prices paid for jewelry, rings, spectacles, gold teeth, diamonds, sterling silver, etc. Cash mailed promptly. Write for free shipping container. LOWE'S, Holland Building, St. Louis 1, Missouri. Dept. M.C.

STUDENT PRACTICE WATCH MOVEMENTS

20 WATCH Movements broken for Student Practice Work, \$10.00. 3 Pounds Broken Costume Jewelry, \$8.00. 1000 Costume Jewelry Stones, \$3.50. LOWE'S, Holland Bldg., St. Louis 1, Mo., Dept. M.C.

PLASTICS

PLASTICS. Sheets, rods, tubes. Free list. Swiss music units \$3.50. Plastics Supply Co., 2618 St. Louis Ave., St. Louis, 6, Mo.

MAGAZINES, BOOKS, ETC.

MAGAZINES (back dated)—foreign, domestic, arts, Books, booklets, subscriptions, pin-ups, etc. Catalog 10¢ (refunded). Cicerone's, 863 First Ave., New York 17, New York.

NOW AVAILABLE—1943 issues of Model Craftsman. \$5.00 per complete set. Model Craftsman, Ramsey, N. J.



GAS MODEL AIRPLANE

Propellers



ALL ONE PRICE
50¢ RETAIL

21 SIZES IN 7 DIAMETERS AND 5 PITCHES!

Model enthusiasts everywhere know through experience that products bearing the Testor label are the "last word" in quality. These propellers are no different! Made of select, finest-grade hardwood, they are carefully shaped and sanded to give them true airfoil and trim, sleek blade edges for greater R.P.M. and increased thrust.

They are individually *sprayed*—not dipped—with Testor's Sanding Sealer for a super-de luxe finish which will take additional applications of dope or further rubbing if desired; feature static balancing and professional design to reduce undesirable strain on crankshafts; come center-bored with standard size shaft hole; are ready for flight direct from the factory. Rubber stamped diameter and pitch appear on the hub of every propeller . . . make identification quick, easy, accurate. For "U" control or free flight, you can't find better propellers at any price!

FOR FREE FLIGHT



FOR "U" CONTROL

- Professionally designed . . . wind tunnel tested
- True airfoil and pitch . . . static balanced
- Made for greater R.P.M. . . . increased thrust
- Completely finished . . . ready for flying
- Wide range of sizes for Free Flight or "U" Control
- All one price — 50c retail

Diameter	Pitch				
8" Diameter	3"*	6"***	8"***	10"	12"
9" Diameter		6"***	8"	10"	12"
10" Diameter		6"	8"	10"	
11" Diameter		6"	8"	10"	
12" Diameter		6"	8"		
13" Diameter		6"	8"		
14" Diameter		6"	8"		

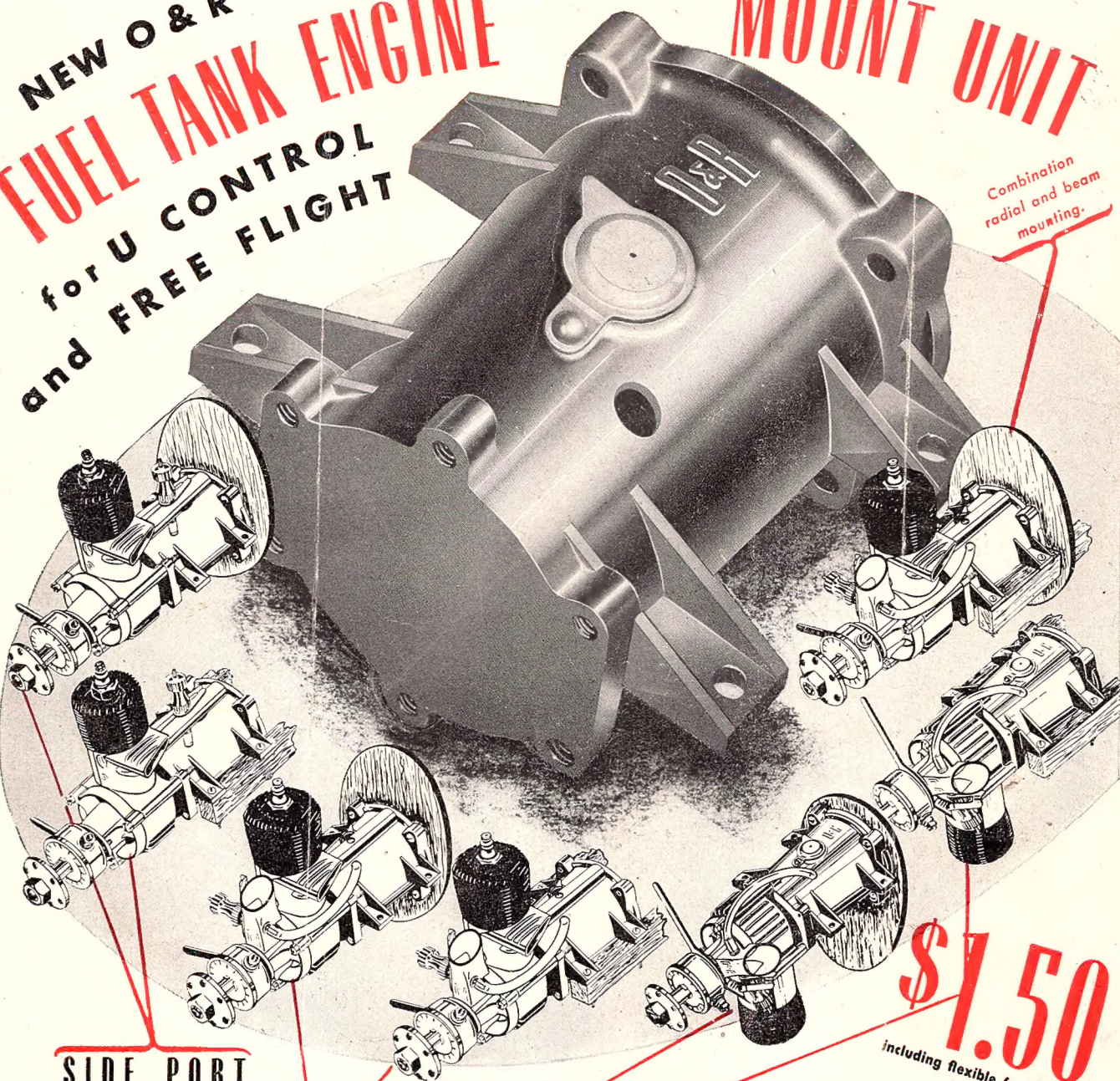
*Has $\frac{1}{8}$ " crankshaft hole. ***Has $\frac{3}{16}$ " crankshaft hole. All other sizes are ready-bored with $\frac{1}{4}$ " hole.

TESTOR CHEMICAL COMPANY • Woodworking Division • ROCKFORD, ILLINOIS

NEW O & R FUEL TANK ENGINE for U CONTROL and FREE FLIGHT

MOUNT UNIT

Combination
radial and beam
mounting.

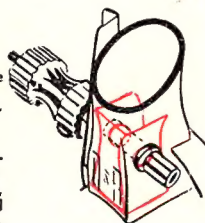


**SIDE PORT
RADIAL OR BEAM**

**ROTARY VALVE
RADIAL OR BEAM**

**INVERTED
RADIAL OR BEAM**

All Rotary Valve
units shipped
since May 1 con-
tain an Inter-
changeable
Venturi, for eas-
ier handling. If
yours does not,
your dealer will
supply one free.



for all O & R 19's or 23's no matter when purchased
Here's a new gas tank and engine mount combination designed to give
O & R owners more flying efficiency and enjoyment. Look at this list of
improved features:

1. Has 4 1/2 times greater fuel capacity, permitting longer sustained U-control flights.
2. Gives you any type mounting: radial or beam, inverted or upright, for either free flight or U-control.
3. Mounting lugs are tapped to take regular crankcase screws so no nuts required to attach engine to tank.
4. Tank is extremely sturdy and rigid—yet weighs only 3/4 oz.
5. Can be used with any O & R 19 or 23 so you can change from Class A to Class B in a matter of minutes without removing tank from ship.
6. Equipped with new spring-loaded filler cap for quick and easy filling.

All these features, plus Ohlsson & Rice engineering, add up to the
ultimate in fuel tank and engine mounting efficiency. See them—and get
yours today—at your dealer's. (If there is no dealer in your locality order
direct from the factory.) Free—Folders on O & R engines and accessories.

\$1.50
including flexible fuel line

THINK TWICE



GET AN

Ohlsson & Rice

STANDARD OF THE MODEL WORLD

Emery at Grande Vista, Los Angeles 23, California